

TM 1-2R-0470-24

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

ILLUSTRATED PARTS BREAKDOWN AIRCRAFT ENGINE MODEL 0-470-15 (CONTINENTAL MOTORS CORP.)

Note. This manual replaces AF TO 2R-0-470-24, 1 January 1957,
for use within the Department of the Army.



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General, United States Army,
Chief of Staff.

Official:

HERBERT M. JONES,
Major General, United States Army,
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NG: State AG; units—same as Active Army.

USAR: None.

For explanation of abbreviations used, see BR 320-50-1.

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SECTION I INTRODUCTION

1. GENERAL.

a. This catalog lists and describes the parts for the O-470-15 engine, manufactured by Continental Motors Corporation, Muskegon, Michigan, U.S.A., hereafter referred to as the manufacturer, and is divided into three sections as shown in the Table of Contents.

b. The Table of Contents at the front of the catalog shows the method of grouping the parts and the sequence of the groups.

c. The Group Assembly Parts List (Section II) consists of the complete engine divided into 17 main groups as shown in the Table of Contents. Each assembly listed is followed immediately by its component parts, properly indented thereunder, to show their relationship to the assembly. Component parts of the complete engine which are not included in any assembly, but which are used in conjunction with, attach, or attach to a certain assembly, are listed either preceding the first detail or following the last detail of that assembly, consistent with the disassembly of the entire engine. Attaching parts are listed immediately after the part or assembly they attach and are labeled "(ATTACHING PARTS)". The end of a group of attaching parts is signified by the symbol "-----" placed after the last attaching part in any particular group.

d. The Numerical Index (Section III) is compiled in

accordance with the numerical part numbering filing system described below:

(1) Part number arrangement begins on the extreme left-hand position and continues from left to right, one position at a time, until the part number numerical arrangement is determined.

(2) The order of precedence in part number numerical arrangement is as follows:

(a) First position arrangement:

Letters A through Z.

Numerals 0 through 9.

(b) Second and succeeding position arrangement:

Space (Blank column).

Diagonal (Slant).

Point (Period).

Dash (—).

Letters A through Z.

Numerals 0 through 9.

Note: Alphabetical O's are considered as zeros.

e. In the Group Assembly Parts List the "PART NO." column lists the manufacturer's part number for all items except those which are purchased from other manufacturers, hereafter referred to as Vendors. Each vendor item is identified by the Vendor's part number. The description of vendor's items is followed by the Manufacturer's part number in parenthesis.

f. The "DESCRIPTION" column gives the nomenclature which appears on the Manufacturer's or Vendor's drawing.

g. The quantities listed in the "UNITS PER ASSY" column are, in the case of assemblies, the total quantity used per engine at the location indicated. The component parts indented under the assemblies are the quantities used per assembly. The quantities specified, therefore, are not necessarily the total per engine. Refer to the Numerical Index (Section III) for the total quantities used per engine.

h. Parts and assemblies for which the symbol "NP" appears in the "UNITS PER ASSY" column are not procurable as such. To obtain such a detail part order the smallest procurable assembly containing it. Replace "NP" assemblies with subassemblies and detail parts. "NP" assemblies in position "I" of the "DESCRIPTION" column are merely to identify the group.

2. **USABLE ON CODE.** At the date of publication of this catalog, only one model of the engine is being produced, therefore no coding is necessary and the "USABLE ON CODE" column is left blank.

3. **SOURCE CODING** — Source coding as applied to the numerical index has been assigned by Department representatives.

SOURCE CODE DEFINITIONS —

(a) CODE "P" — PARTS UNDER INVENTORY STOCK CONTROL

(1) CODE "P" is applied to parts which are procured in view of relatively high usage. Code "P" parts may be requisitioned and installed by any maintenance level, unless followed by the letter — "O", which restricts requisition and replacement to Depot (O&R) level only. Restricted service manufacture is considered practicable but only after an attempt has been made to procure from Supply Sources. In lieu of Procurement of "P" Coded parts, the Department may designate a Depot (O&R) level activity to manufacture supply requirements for the Program.

(2) CODE "P1" is applied to parts which are very difficult or uneconomical to manufacture. Service manufacture is considered impracticable. Code "P1" parts may be requisitioned and installed by any maintenance level, unless followed by the letter — "O" which restricts requisition and replacement to Depot (O&R) level only.

(b) CODE "M" MANUFACTURE, PARTS NOT PROCURED

(1) CODE "M" is applied to parts which are within the facilities of any activity to manufacture. Procurement and stocking are not justified in view of the relatively low usage, or storage and installation factors, of these parts. Needs are to be met by local manufacture as required.

(2) CODE "M1" is applied to parts which can be manufactured only by utilizing the facilities of the Depot (O&R) activity. Procurement and stocking of these parts are

not justified in view of their relatively low usage and installation factors. The needs of all activities are to be met through salvage, or by Depot (O&R) level manufacture.

(c) CODE "A" ASSEMBLE — ASSEMBLY NOT PROCURED

(1) CODE "A" is applied to assemblies made up of two or more units each of which carry individual part numbers and description, and which may be assembled by any Maintenance level.

(2) CODE "A1" is applied to assemblies made up of two or more parts each of which carry individual part numbers and description, and which may be assembled only by activities having Depot (O&R) facilities.

(d) CODE "X" PARTS CONSIDERED IMPRACTICABLE FOR MANUFACTURE OR PROCUREMENT

(1) CODE "X" is applied to Main Structural Members or similar parts which, if required, would suggest extensive aircraft or equipment reconditioning. The need of a part, or parts, coded "X" (wing spar caps, center section structure) should normally result in a recommendation to retire the aircraft or equipment from Service.

(2) CODE "X1" is applied to parts for which procurement of the next larger assembly is justified; e.g., an integral detail part, such as welded segments, inseparable from its assembly; a part machined in a matched set; or a part of an assembly which, if required, would suggest extensive reconditioning of each assembly.

(3) CODE "X2" is applied to parts which are neither procured nor stocked. Activities requiring such parts shall attempt to obtain from salvage; if not obtainable from salvage, such parts shall be requisitioned through normal supply channels with supporting justification.

(e) CODE * PARTS NOT PROCURED, MANUFACTURED OR STOCKED

(1) CODE * applies to installation drawings, diagrams, instructions or field service drawings, basic drawing numbers which cannot be procured or manufactured and obsolete parts.

4. **VENDORS' CODE SYMBOLS.** Standard code symbols, placed in parenthesis after the part description, are used to designate the manufacturer of purchased items of equipment. These symbols are as follows:

CODE VENDORS' NAME AND ADDRESS

BG B. G. CORPORATION
New York, New York

BPD BENDIX PRODUCTS DIV.
Bendix Aviation Corp
South Bend, Indiana

CK CHAMPION SPARK PLUG CO
Toledo, Ohio

CODE VENDORS' NAME AND ADDRESS

ECP ECLIPSE PRODUCTS DIV
Bendix Aviation Corp
Teterboro, New Jersey

GP GARLOCK PACKING CO
Palmyra, New York

NM NATIONAL MOTOR BEARINGS CO INC
Redwood City, California

PE PESCO PRODUCTS DIV
Borg Warner Corp
Bedford, Ohio

HQ ROMEC DIV
Lear Inc
Elyria, Ohio

*RW RAY WHYTE ELECTRICAL PROD
East Detroit, Michigan

ENT SCINTILLA MAGNETO DIV
Bendix Aviation Corp
Sidney, New York

TF TITFLEX INC
Newark, New Jersey

TIN TINNERMAN PRODUCTS INC
Cleveland, Ohio

UC UNITED-CARR FASTENER CORP
Cambridge, Massachusetts

VM VICTOR MFG AND GASKET CO
Chicago, Illinois

WIT WITTEK MFG CO
Chicago, Illinois

CODE VENDORS' NAME AND ADDRESS

WKI WALDES-KOHINOOR INC
Long Island City, New York

* Does not appear in Navy Code of Manufacturers' Names. Used for convenience only.

5. USE OF ILLUSTRATED PARTS BREAKDOWN.

6. HOW TO FIND THE PART NUMBER IF THE SECTION OR SYSTEM OF THE EQUIPMENT IN WHICH THE PART IS USED IS KNOWN:

a. Turn to the Table of Contents and find the page number for the Major Assembly or System in which the part is used.

b. Turn to the page determined in step 6a.

c. Locate the part and its index number on the illustration.

d. Find the index number on the Group Assembly Parts List page to determine complete description.

7. HOW TO FIND THE ILLUSTRATION FOR A PART WHEN PART NUMBER IS KNOWN:

a. Refer to Section III, the Numerical Index, and find the part number.

b. Turn to Section II and find the first figure and index number indicated in the Numerical Index for that part. If this figure shows the part in a section or system of the equipment other than the one desired, refer to the other figure numbers listed in the Numerical Index.

c. On the face of the illustration find the index number determined in step 7b.

8. AIR FORCE STOCK NUMBERS. When the Air Force Stock Number of an item does not appear, refer to the 8-00-1 Master Numerical Index.

Legend for Figure 1

Index Number		Figure Numbers
1	Accessories Group	2
2	Ignition System	3
3	Priming System	4
4	Carburetor Assembly	5
5	Fuel Pump	6
6	Induction System and Oil Return Hose Assembly	7
7	Oil Sump Installation	8
8	Accessory Case, Gears and Covers Assembly	9, 10
9	Oil Pump and Hose Assembly	11
10	Cylinders and Pushrod Assembly	12
11	Complete Piston Assembly	13
12	Crankcase Group	14
13	Camshaft and Lifters Assembly	15
14	Complete Connecting Rod Assembly	16
15	Complete Crankshaft Assembly	17

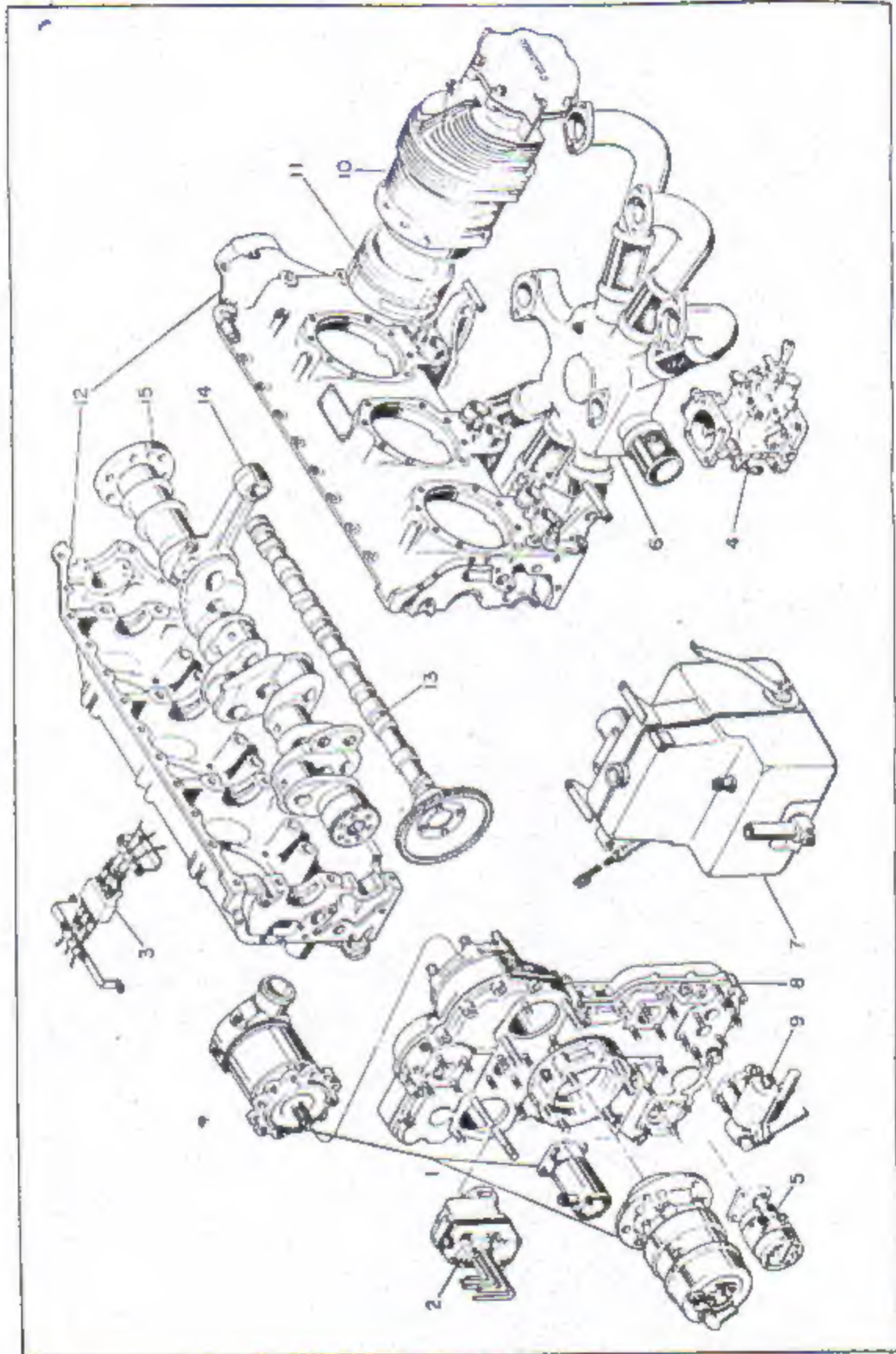


Figure 1. Continental O-470-15 Aircraft Engine

**SECTION II
GROUP ASSEMBLY PARTS LIST**

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
2-	No Number	ACCESSORIES GROUP	NP	
-1	AN5547-2	. GENERATOR, Tachometer	1	
		(ATTACHING PARTS)		
-2	356-428	. LOCK	4	
-3	AN121502	. NUT	4	
-4	AN960-416L	. WASHER	4	

-5	AN4045-1	. GASKET	1	
-6	AN4116-R1	. STARTER, Direct cranking electric type 756-10 (ECP) (532197)	1	
		(ATTACHING PARTS)		
-7	356-824	. LOCK	6	
-8	AN121504	. NUT	6	
-9	AN960-616	. WASHER	6	

-10	AN4047-1	. GASKET	1	
-11	1345-3	. GENERATOR, Engine driven 24 v dc 50 amp (ECP) (532182)	1	
		(ATTACHING PARTS)		
-12	356-824	. LOCK	6	
-13	AN121504	. NUT	6	
-14	AN960-616	. WASHER	6	

-15	AN4047-1	. GASKET	1	
-16	3P-194-F	. PUMP, Vacuum (PE) (537340)	1	
		(ATTACHING PARTS)		
-17	356-428	. LOCK	4	
-18	AN121502	. NUT	4	
-19	AN960-416L	. WASHER	4	

-20	AN4045-1	. GASKET	1	

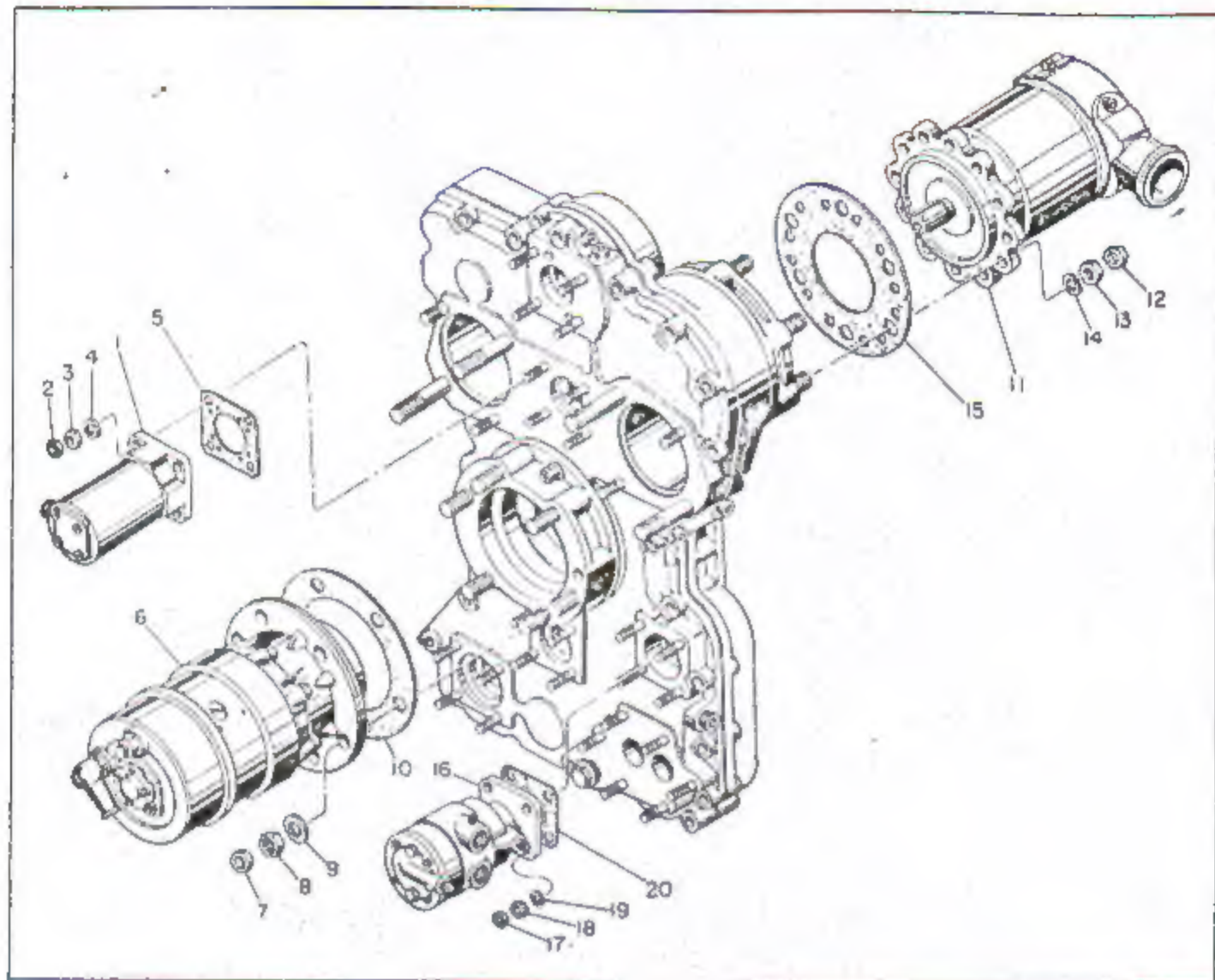


Figure 2. Accessories Group

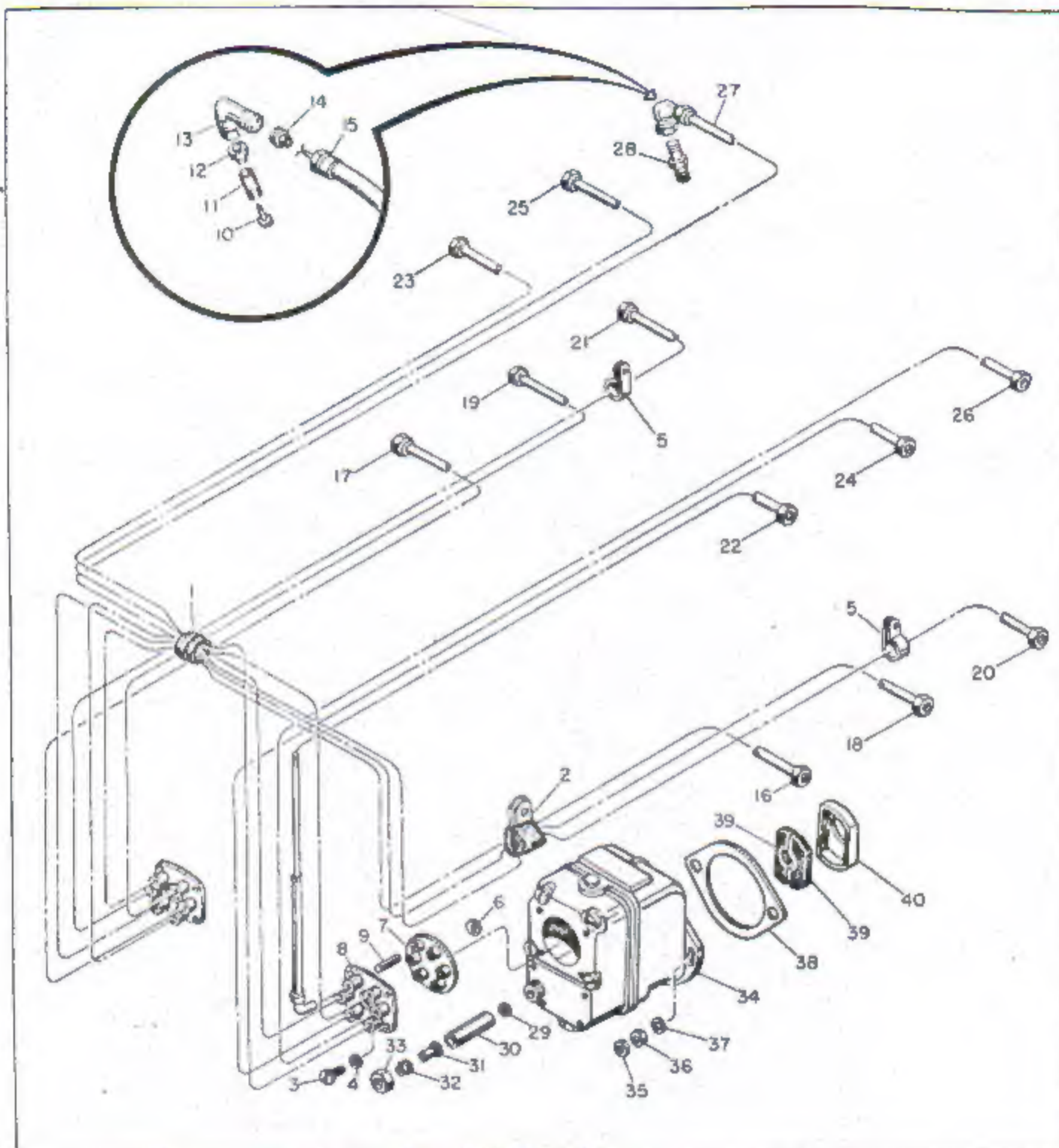


Figure 3. Ignition System

Figure 3. Ignition System											
FIG. & INDEX NO.	PART NO.	DESCRIPTION								UNITS PER ASSY	USABLE ON CODE
		1	2	3	4	5	6	7			
3-	No Number	IGNITION SYSTEM								NP	
-1	49162	.	BAND, Wire harness type B size 5 (UC) (533067) . . .							1	
-2	A25884	.	BRACKET, Ignition cable (TF) (537316)							2	
	536043	.	HARNESS ASSY, Radio shielded ignition							1	
		(ATTACHING PARTS)									
-3	AN501-10-10	.	SCREW							8	

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
3-4	AN235-10	WASHER	8	
-5	AN7420-9C	CLAMP	2	
-6	10-51677	WASHER, High tension cable contact (SNT)	12	
-7	10-50771	GROMMET, Six cylinder distributor cable (SNT) (35219)	3	
-8	10-50777	PLATE, Six cylinder shielded cable (SNT) (25312)	2	
	WE1214-1	HARNESS ASSEMBLY, Ignition left (RW)	1	
	WE1214-2	HARNESS ASSEMBLY, Ignition right (RW)	1	
-9	WE1122	SLEEVE, Adapter rubber (RW)	6	
-10	AN302-20-3	PIN	6	
-11	AN4164-2	SLEEVE	6	
-12	WE1008	BUSHING, Rubber (RW)	6	
-13	AN3104-1	ELBOW	6	
-14	WE1009	SPACER ASSEMBLY (RW)	6	
-15	No Number	CABLE, 5mm high tension Ignition Spec MIL- C-3162, Type I, Grade "A", Class 2	AR	
-16	WE301-1-3000	CONDUIT ASSY, Ignition cable No. 1 cylinder lower long elbow (RW)	1	
-17	WE301-1-2700	CONDUIT ASSY, Ignition cable No. 2 cylinder lower long elbow (RW)	1	
-18	WE301-2-3600	CONDUIT ASSY, Ignition cable No. 3 cylinder lower short elbow (RW)	1	
-19	WF301-2-3400	CONDUIT ASSY, Ignition cable No. 4 cylinder lower short elbow (RW)	1	
-20	WF301-2-4300	CONDUIT ASSY, Ignition cable No. 5 cylinder lower short elbow (RW)	1	
-21	WE301-2-4000	CONDUIT ASSY, Ignition cable No. 6 cylinder lower short elbow (RW)	1	
-22	WE301-2-2200	CONDUIT ASSY, Ignition cable No. 1 cylinder upper short elbow (RW)	1	
-23	WF301-2-3200	CONDUIT ASSY, Ignition cable No. 2 cylinder upper short elbow (RW)	1	
-24	WE301-1-3000	CONDUIT ASSY, Ignition cable No. 3 cylinder upper long elbow (RW)	1	
-25	WE301-1-3800	CONDUIT ASSY, Ignition cable No. 4 cylinder upper long elbow (RW)	1	
-26	WE301-2-3600	CONDUIT ASSY, Ignition cable No. 5 cylinder upper short elbow (RW)	1	
-27	WF301-2-4200	CONDUIT ASSY, Ignition cable No. 6 cylinder upper short elbow (RW)	1	
-28	C275	PLUG, Spark (CK) (531132-1)	12	
	RC265	PLUG, Spark (CK) (530892)	Opt	
	BG-706-8	PLUG, Spark (BG) (530203)	Opt	
	10-52305	KIT, Ground terminal (SNT) (352024)	2	
-29	2-155	WASHER, Plain brass 0.1 ID x 0.313 OD x 0.02 in. thick (SNT) (25314)	1	
-30	10-37668	SLEEVE, Ground wire insulating 0.188 ID x 0.375 OD x 0.968 in. lg (SNT) (530455)	1	
-31	10-7029	FERRULE, Shielded ground wire inner (SNT) (25316)	1	
-32	10-7030	FERRULE, Shielded ground wire outer (SNT) (25317)	1	
-33	10-37669	NUT, Hex coupling 5/8-24 (SNT) (25318)	1	
-34	10-51365-17	MAGNETO, Model S6LN-21 (SNT) (531676) (T.O. 8E2- 5-2-14) (ATTACHING PARTS)	2	
-35	356-524	LOCK	4	
-36	AN121503	NUT	4	
-37	10-51365	WASHER, Plain 0.33 ID x 0.75 OD x 0.09 in. thick	4	
-38	535324	GASKET, Magneto	2	

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
3-39 -40	531179 531178	• BUSHING, Magneto drive coupling • RETAINER, Magneto coupling	4 2	
4-	532656	PRIMING SYSTEM ASSEMBLY.....	1	
	532946	• CLAMP ASSY, Primer line right side	1	
-1	AN530-10-6	• SCREW	2	
-2	C1770 10Z-1	• NUT, Flat speed type No. 10 (TIN) (532382)	2	
-3	532945	• CLAMP, Primer line	2	
-4	532947	• BRACKET, Primer line clamp	1	
	532943	• CLAMP ASSY, Primer line left side	1	
-5	AN530-10-6	• SCREW	2	
-6	C1779-10Z-1	• NUT, Flat type speed No. 10 (TIN) (532382)	2	
-7	532945	• CLAMP, Primer line	1	
-8	532944	• BRACKET, Primer line clamp	1	
-9	532686	• TUBE ASSEMBLY, Cylinders No. 1 and 2	2	
	532685	• TUBE ASSEMBLY, Cylinders No. 3 and 4	2	
	532687	• TUBE ASSEMBLY, Cylinders No. 5 and 6	2	
-10	AN4022-1	• NIPPLE	4	
-11	AN4023-1	• ELBOW	2	

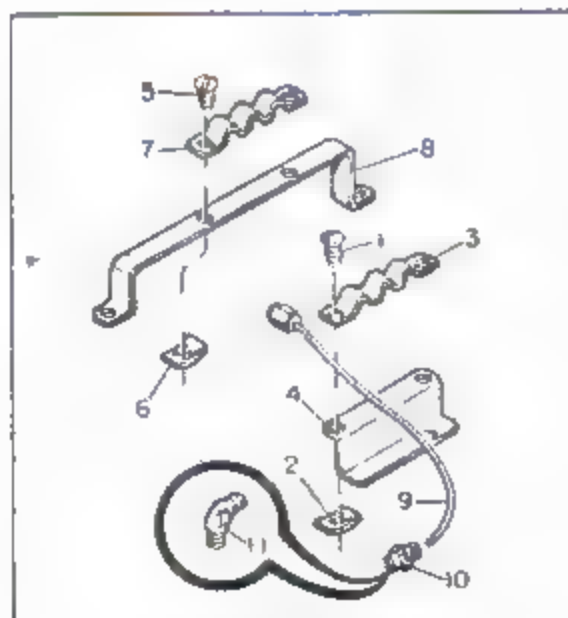


Figure 4. Priming System Assembly

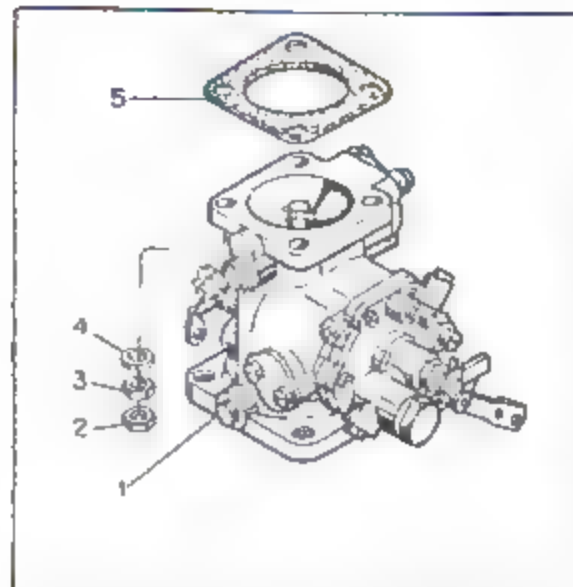


Figure 5. Carburetor Assembly

FIG & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-	No Number	CARBURETOR ASSEMBLY	NP	
-1	391629	. CARBURETOR ASSY, Model PB-5C (BPD) (625098) (ATTACHING PARTS)	1	
-2	356-524	. LOCK	4	
-3	AN121503	. NUT	4	
-4	AN980-510L	. WASHER	4	
-5	35985	. GASKET	1	
6-1	RG-9040	PUMP, Fuel type G18 (RO) (532402)	1	
		(ATTACHING PARTS)		
-2	356-524	LOCK	4	
-3	AN121503	NUT	4	
-4	AN980-510	WASHER	4	
-5	AN4059-1	GASKET	1	

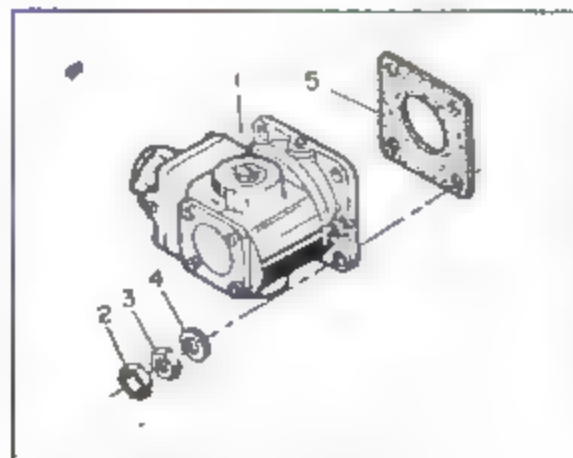


Figure 6. Fuel Pump

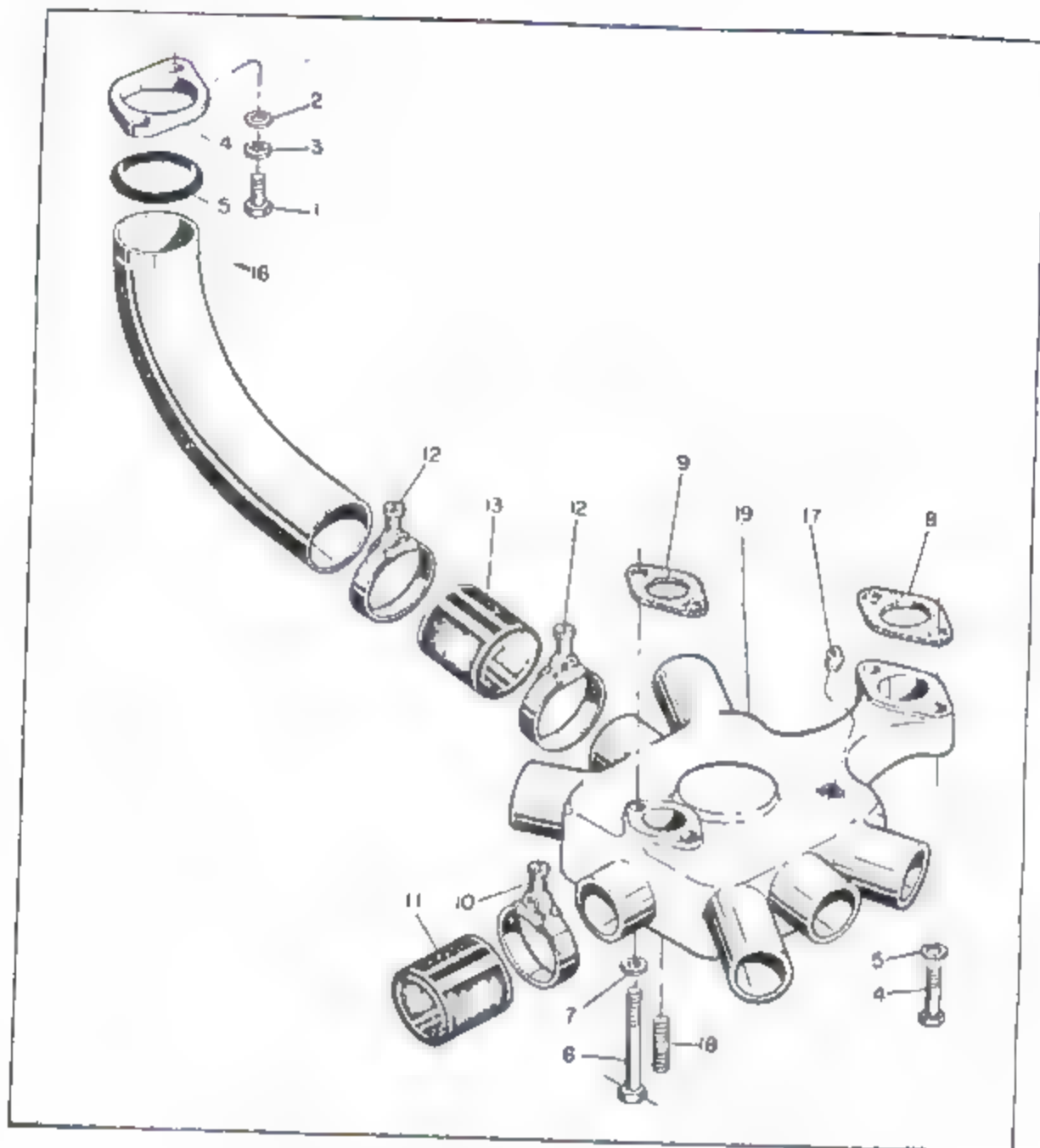


Figure 7. Induction System and Oil Return Hose Assembly

FIG. & INDEX NO.	PART NO.	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE
		1	2	3	4	5	6	7		
7-	No Number	INDUCTION SYSTEM AND OIL RETURN HOSE ASSY . . .							NP	
		(ATTACHING PARTS)								
-1	24830	.	BOLT, Hex head drilled 1/4-20 x 0.81 in. long						12	
-2	AN860-416L	.	WASHER						12	
-3	AN830A416	.	WASHER						12	
-4	AN75A21	.	BOLT						2	
-5	AN860-516L	.	WASHER						2	
-6	538989	.	BOLT, Hex head drilled 5/16-18 x 3.62 in. long						2	
-7	AN860-516L	.	WASHER						2	
-8	352059	.	GASKET, Intake and oil drain manifold front						1	
-9	352060	.	GASKET, Intake and oil drain manifold rear						1	
-10	GM-2 44	.	CLAMP, Hose 2-7/16 in. ID (WIT) (36151-E)						2	
-11	24827	.	HOSE, 2 ID x 2-1/2 in. long						1	
	534204-A2	.	INDUCTION SYSTEM ASSEMBLY, Complete						1	
-12	GM-2 44	.	CLAMP, Hose 2-7/16 in. ID (WIT) (36151-E)						12	
-13	24827	.	HOSE, 2 ID x 2-1/2 in. long						6	
-14	24826	.	FLANGE, Intake manifold tube						6	
-15	8495	.	SEAL, Intake manifold (GP) (536740)						8	
-16	40640-C	.	TUBE, Intake manifold						8	
	534204-A1	.	MANIFOLD STUDDING ASSY, Intake and oil drain						1	
-17	AN813-1	.	PLUG						1	
-18	AN126300	.	BOLT STUD						4	
-19	534204	.	MANIFOLD, Intake and oil drain						NP	

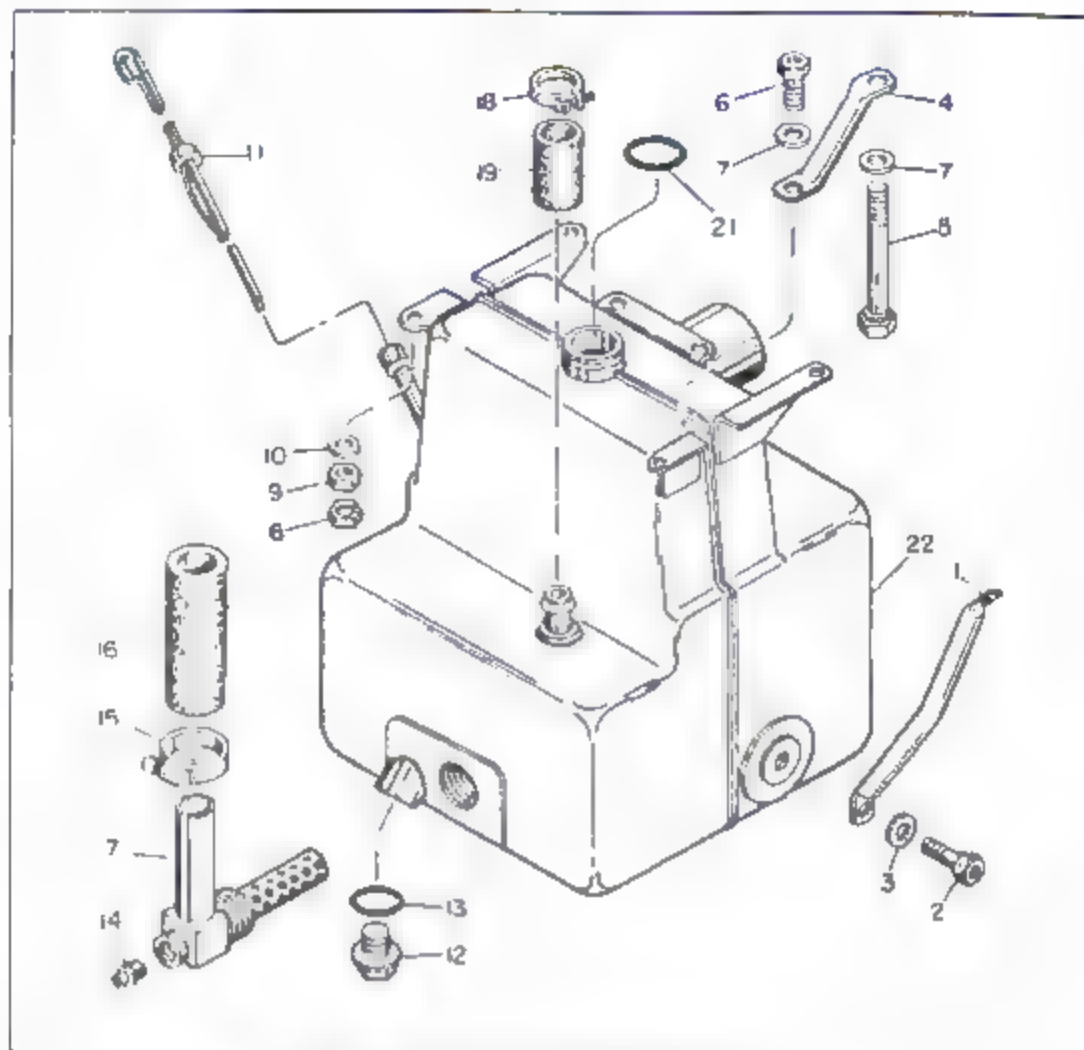


Figure 8. Oil Sump Installation

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
8-	No Number	SUMP INSTALLATION, OIL	NP	
-1	625140 625109	BRACKET, Sump support 1, 3, 5 side BRACKET, Sump support 2, 4, 6 side (ATTACHING PARTS)	1 1	
-2	AN75-4	BOLT	2	
-3	AN960-516L	WASHER	2	
-4	352093	BRACKET, Oil sump support front (ATTACHING PARTS)	1	
-5	538999	BOLT, Hex head drilled 5/16-18 x 3.62 in. long	REF	
-6	AN75-4	BOLT	1	
-7	AN960-516L	WASHER	1	
	532461-A1	SUMP ASSEMBLY, Complete oil (ATTACHING PARTS)	NP	
-8	356-524	LOCK	6	
-9	AN121503	NUT	6	
-10	AN960-516L	WASHER	6	
-11	A36114 23888 23389 36114	ROD ASSEMBLY, Oil gauge FELT, Oil gauge collar COLLAR, Oil gauge dust ROD, Oil gauge	1 1 NP NP	
-12	2832	PLUG, Hex drilled head brass 1-14	1	

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
8-13	AN913-16	. . GASKET	1	
-14	AN913-1D	. . PLUG	1	
-15	AN745-3A	. . CLAMP	2	
-16	532490	. . HOSE, 1 ID x 4 in. long	1	
-17	532458	. . SCREEN ASSEMBLY, Suction oil	1	
-18	AN745-2A	. . CLAMP	2	
-19	20275	. . HOSE, 5/8 ID x 1-7/8 in. long	1	
-20	532461	. . SUMP ASSEMBLY, Oil	1	
-21	AN123879	. SEAL	1	
9-	No Number	ACCESSORY CASE, GEARS AND COVERS ASSY	NP	
	533055	. RETAINER ASSEMBLY, Oil cap	1	
-1	AN430A4-4	. . RIVET	1	
-2	533054	. . CHAIN, Oil cap retainer	1	
-3	533053	. . RING, Oil cap retainer	1	
	352111	. . CAP ASSEMBLY, Oil filter	1	
-4	533955	. . GASKET, Oil filler cap (furnished with 352111)	1	
-5	No Number	. . CAP, Oil filter	NP	
	532540	. SPOUT ASSEMBLY, Oil filler	1	
		(ATTACHING PARTS)		
-6	356-428	. LOCK	2	
-7	AN121502	. NUT	2	
-8	AN960-416L	. WASHER	2	

-9	AN435-5C4	. . RIVET	2	
-10	532613	. . CLIP, Spring	2	
-11	535053	. . NECK, Oil filler	1	
-12	532632	. . SPOUT, Oil filler	NP	
-13	532509	. GASKET, Oil filler spout	1	
-14	36181	. COVER, Governor pad	1	
		(ATTACHING PARTS)		
-15	356-524	. LOCK	4	
-16	AN121503	. NUT	4	
-17	AN960-516	. WASHER	4	

-18	AN100008	. GASKET, Type XX engine accessory drive	1	
-19	532532	. COVER, Upper hydraulic pump pad	1	
		(ATTACHING PARTS)		
-20	356-524	. LOCK	4	
-21	AN121503	. NUT	4	
-22	AN960-516	. WASHER	4	

-23	AN4044-1	. GASKET	1	
-24	532139	. ADAPTER, Starter	1	
		(ATTACHING PARTS)		
-25	356-428	. LOCK	2	
-26	AN121502	. NUT	2	
-27	AN960-416L	. WASHER	2	

-28	532520	. GASKET, Starter adapter	1	
-29	25005	. COVER, Vacuum pump adapter	1	
		(ATTACHING PARTS)		
-30	356-428	. LOCK	4	
-31	AN121502	. NUT	4	
-32	AN960-416L	. WASHER	4	

-33	AN4045-1	. GASKET, Vacuum and hydraulic power pumps	1	
-34	20273	. NIPPLE, Hose 3/4-16 NF for 5/8 in. ID Hose	1	
-35	AN900-13	. GASKET	1	
-36	356-524	. LOCK	19	

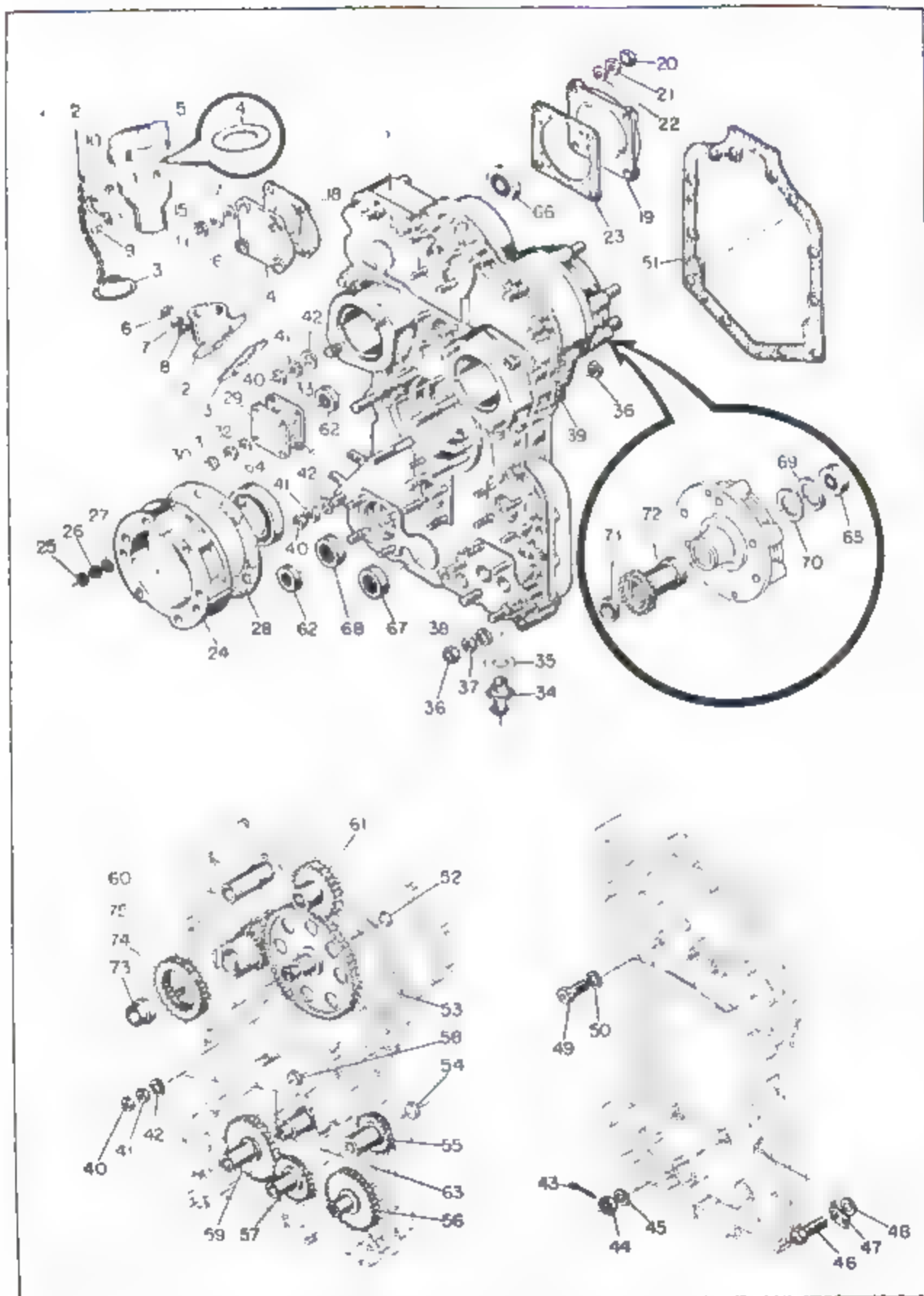


Figure 9. Accessory Case, Gears and Cover Assembly

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
9-37	AN121503	NUT	17	
-38	AN960-516	WASHER	17	
-39	532820-A1	MACHINING ASSY, Accessory case front and rear (see figure 10) (ATTACHING PARTS)	1	
-40	356-524	LOCK	5	
-41	AN121503	NUT	5	
-42	AN960-516	WASHER	5	
-43	AN381-2-7	PIN	2	
-44	AN960-4	NUT	2	
-45	AN960-416L	WASHER	2	
-46	AN75A17	BOLT	1	
-47	501868	WASHER, Tab 5/16 in.	1	
-48	AN960-516L	WASHER	1	
-49	AN75A7	BOLT	4	
-50	AN960-516L	WASHER	4	
-51	532482	GASKET, Crankcase to accessory case	1	
9-	532541	GEAR ASSEMBLY, Tachometer drive upper	1	
-52	532199	PLUG, Oil 0.633 OD x 1/4 in. cup	1	
-53	532177	GEAR, Tachometer drive upper	NP	
	532543	GEAR ASSEMBLY, Hydraulic pump drive lower	1	
-54	535527	PLUG, Oil 0.758 PD x 1/4 in. cup	1	
-55	532181	GEAR, Hydraulic pump drive lower	NP	
-56	532174	GEAR, Oil pump drive	1	
-57	532178	GEAR, Fuel pump idler	1	
	532542	GEAR ASSEMBLY, Fuel pump drive	1	
-58	538634	PLUG, Oil 0.633 OD x 1/4 in. cup	1	
-59	532180	GEAR, Fuel pump drive	NP	
-60	533406	PLUG, Hydraulic pump drive upper aluminum alloy 0.93 OD and 1.34 OD x 0.75 ID x 2.49 in. long	1	
-61	532179	GEAR, Propeller governor drive	1	
-62	50021-S	SEAL, Oil 1.379 OD for 9/16 in. dia shaft (NM) (532510)	2	
-63	538696	SHAFT, Tachometer drive	1	
-64	49141	SEAL, Oil 3 OD for 2-1/4 in. dia shaft (VM) (532467)	1	
-65	50046-S	SEAL, Oil 1.83 OD for 1-1/8 in. dia shaft (NM) (532489)	1	
-66	50717-S	SEAL, Oil 1.63 OD for 15/16 in. dia shaft (NM) (532508)	1	
-67	50184-S	SEAL, Oil 1.503 OD for 15/16 in. dia shaft (NM) (532508)	1	
-68	50030-S	SEAL, Oil 1.503 OD for 13/16 in. dia shaft (NM) (532534)	1	
-69	5100-112	RING, External retaining (WKI) (532486)	1	
-70	532487	WASHER, Thrust aluminum alloy 1.127 ID x 1.5 OD x 0.62 in.	1	
9-	532536	GEAR ASSEMBLY, Generator drive	1	
-71	532202	PLUG, Oil 0.946 OD x 1/4 in. cup	1	
-72	532172	GEAR, Generator drive	NP	
	532479	GEAR ASSEMBLY, Magneto cluster	2	
-73	531177	SLEEVE, Magneto drive gear	1	
-74	532478	GEAR, Magneto drive	NP	
-75	532477	GEAR, Magneto drive shaft	NP	
10-	532820	MACHINING ASSEMBLY, Accessory case front and rear (see figure 9-39) (For attaching parts see figure 9)	REF	
	532526	STUDDING AND MACHINING ASSY, Accessory case front half (ATTACHING PARTS)	NP	
-1	AN121503	NUT	2	
-2	AN960-516	WASHER	2	

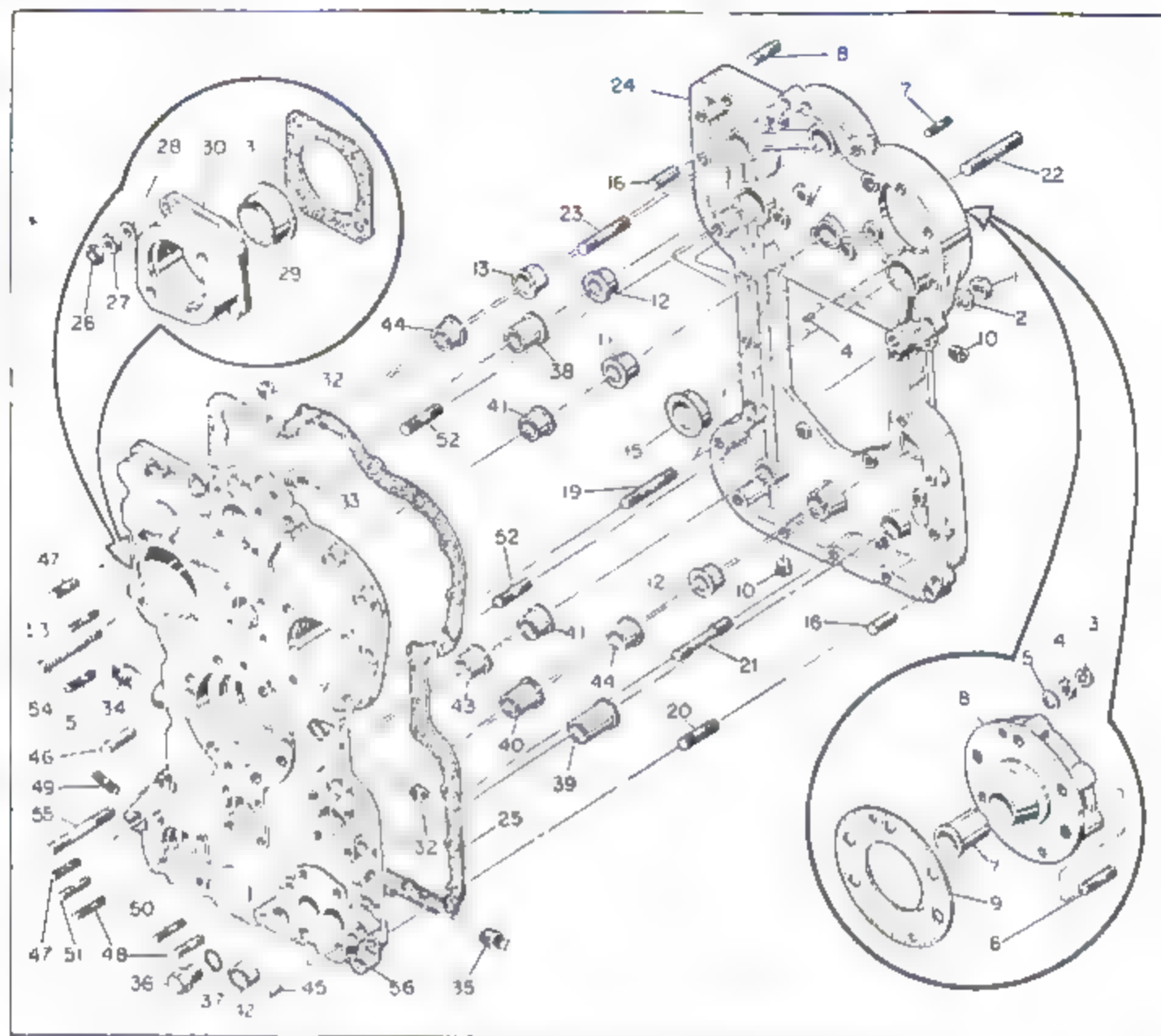


FIG & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
10-11	532318	BUSHING, Upper tachometer drive front 0.795 ID x 0.81 in. long	1	
-12	532331	BUSHING, Propeller governor drive front 0.92 ID x 0.61 in. long	2	
-13	532481	BUSHING, Upper hydraulic pump drive front 0.92 ID x 0.69 in. long	1	
-14	533031	PIN, 0.093 dia x 0.187 in. long	2	
-15	532485	BUSHING, Magneto drive front 1.232 ID x 0.61 in. lg	2	
-16	532525	DOWEL, Steel 0.375 dia x 1.31 in. long	2	
-17	22319	STUD, Generator adapter pad 1/4-20 x 1/4-28 x 1-1/4 in.	2	
	22319P003	STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.003 in. OS on PD	AR	
	22319P006	STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.006 in. OS on PD	AR	
	22319P009	STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.009 in. OS on PD	AR	
-18	22325	STUD, Plain 5/16-18 x 5/16-24 x 1.5 in.	4	
	22325P003	STUD, 5/16-18 x 5/16-24 x 1.5 in. 0.003 in. OS on PD	AR	
	22325P006	STUD, 5/16-18 x 5/16-24 x 1.5 in. 0.006 in. OS on PD	AR	
	22325P009	STUD, 5/16-18 x 5/16-24 x 1.5 in. 0.009 in. OS on PD	AR	
-19	532505	STUD, Plain 5/16-18 x 5/16-24 x 2.75 in.	2	
	532505P003	STUD, 5/16-18 x 5/16-24 x 2.75 in. 0.003 in. OS on PD	AR	
	532505P006	STUD, 5/16-18 x 5/16-24 x 2.75 in. 0.006 in. OS on PD	AR	
	532505P009	STUD, 5/16-18 x 5/16-24 x 2.75 in. 0.009 in. OS on PD	AR	
-20	532507	STUD, Plain 5/16-18 x 5/16-24 x 1.88 in.	13	
	532507P003	STUD, 5/16-18 x 5/16-24 x 1.88 in. 0.003 in. OS on PD	AR	
	532507P006	STUD, 5/16-18 x 5/16-24 x 1.88 in. 0.006 in. OS on PD	AR	
	532507P009	STUD, 5/16-18 x 5/16-24 x 1.88 in. 0.009 in. OS on PD	AR	
-21	AN126420	BOLT STUD	1	
-22	532514	STUD, Plain 3/8-16 x 3/8-24 x 2.94 in.	5	
	532514P003	STUD, 3/8-16 x 3/8-24 x 2.94 in. 0.003 in. OS on PD	AR	
	532514P006	STUD, 3/8-16 x 3/8-24 x 2.94 in. 0.006 in. OS on PD	AR	
	532514P009	STUD, 3/8-16 x 3/8-24 x 2.94 in. 0.009 in. OS on PD	AR	
-23	532612	STUD, Plain 5/16-18 x 5/16-24 x 2-1/2 in.	1	
	532612P003	STUD, 5/16-18 x 5/16-24 x 2-1/2 in. 0.003 in. OS on PD	AR	
	532612P006	STUD, 5/16-18 x 5/16-24 x 2-1/2 in. 0.006 in. OS on PD	AR	
	532612P009	STUD, 5/16-18 x 5/16-24 x 2-1/2 in. 0.009 in. OS on PD	AR	
-24	532350	CASE, Accessory front half	NP	
-25	532473	GASKET, Accessory case front to rear	1	
	532563	STUDDING AND MACHINING ASSY, Accessory case rear half	NP	
	532538	ADAPTER ASSEMBLY, Left magneto	1	
	532537	ADAPTER ASSEMBLY, Right magneto	1	
		(ATTACHING PARTS)		
-26	358-428	LOCK, Nut 1/4-28	4	
-27	AN121502	NUT	4	
-28	AN960-416L	WASHER	4	
-29	532684	BUSHING, Magneto adapter bronze 1.732 ID x 0.922 in. long	1	
-30	532300	ADAPTER, Left Magneto	NP	
	532299	ADAPTER, Right Magneto	NP	
-31	532518	GASKET, Magneto adapter	2	
-32	AN932-2	PLUG	2	
-33	AN913-28	PLUG	1	
-34	AN913-38	PLUG	1	
-35	AN932C4	PLUG	1	
-36	537744	PLUG, Special hex head brass 1-18 NS	1	
-37	AN900-16	GASKET	1	
-38	532257	BUSHING, Propeller governor drive rear 0.92 ID x 1.18 in. long	1	
-39	532316	BUSHING, Oil pump drive 0.795 ID x 1.75 in. long	1	

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
10-40	532317	. . BUSHING, Fuel pump idler 0.795 ID x 1.25 in. long . .	1	
-41	532318	. . BUSHING, Tachometer drive lower rear 0.795 ID x 0.81 in. long	2	
-42	532437	. . BUSHING, Oil pump driven gear 0.795 ID x 1.002 OD x 9/16 in. long	2	
-43	532480	. . BUSHING, Fuel pump drive 0.795 ID x 0.72 in. long	1	
-44	532481	. . BUSHING, Upper hydraulic pump drive rear 0.92 ID x 0.89 in. long	2	
-45	532683	. . DOWEL, Steel 0.25 dia x 3/4 in. long	2	
-46	532524	. . DOWEL, Steel 0.375 dia x 1-1/2 in. long	2	
-47	22319	. . STUD, Plain 1/4-20 x 1/4-28 x 1-1/4 in.	6	
	22319P003	. . STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.003 in. OS on PD	AR	
	22319P006	. . STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.006 in. OS on PD	AR	
	22319P009	. . STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.009 in. OS on PD	AR	
-48	22325	. . STUD, Plain 5/16-18 x 5/16-24 x 1.5 in.	10	
	22325P003	. . STUD, 5/16-18 x 5/16-24 x 1.5 in. 0.003 in. OS on PD	AR	
	22325P006	. . STUD, 5/16-18 x 5/16-24 x 1.5 in. 0.006 in. OS on PD	AR	
	22325P009	. . STUD, 5/16-18 x 5/16-24 x 1.5 in. 0.009 in. OS on PD	AR	
-49	AN125004	. . BOLT STUD	2	
-50	25008	. . STUD, Plain 1/4-20 x 1/4-28 x 1-3/8 in.	4	
	25008P003	. . STUD, 1/4-20 x 1/4-28 x 1-3/8 in. 0.003 in. OS on PD	AR	
	25008P006	. . STUD, 1/4-20 x 1/4-28 x 1-3/8 in. 0.006 in. OS on PD	AR	
	25008P009	. . STUD, 1/4-20 x 1/4-28 x 1-3/8 in. 0.009 in. OS on PD	AR	
-51	532501	. . STUD, Plain 1/4-20 x 1/4-28 x 1-1/4 in.	8	
	532501P003	. . STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.003 in. OS on PD	AR	
	532501P006	. . STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.006 in. OS on PD	AR	
	532501P009	. . STUD, 1/4-20 x 1/4-28 x 1-1/4 in. 0.009 in. OS on PD	AR	
-52	532507	. . STUD, Plain 5/16-18 x 5/16-24 x 1.88 in.	2	
	532507P003	. . STUD, 5/16-18 x 5/16-24 x 1.88 in. 0.003 in. OS on PD	AR	
	532507P006	. . STUD, 5/16-18 x 5/16-24 x 1.88 in. 0.006 in. OS on PD	AR	
	532507P009	. . STUD, 5/16-18 x 5/16-24 x 1.88 in. 0.009 in. OS on PD	AR	
-53	532511	. . STUD, Plain 5/16-18 x 5/16-24 x 1.62 in.	4	
	532511P003	. . STUD, 5/16-18 x 5/16-24 x 1.62 in. 0.003 in. OS on PD	AR	
	532511P006	. . STUD, 5/16-18 x 5/16-24 x 1.62 in. 0.006 in. OS on PD	AR	
	532511P009	. . STUD, 5/16-18 x 5/16-24 x 1.62 in. 0.009 in. OS on PD	AR	
-54	532513	. . STUD, Plain 5/16-18 x 5/16-24 x 3.19 in.	4	
	532513P003	. . STUD, 5/16-18 x 5/16-24 x 3.19 in. 0.003 in. OS on PD	AR	
	532513P006	. . STUD, 5/16-18 x 5/16-24 x 3.19 in. 0.006 in. OS on PD	AR	
	532513P009	. . STUD, 5/16-18 x 5/16-24 x 3.19 in. 0.009 in. OS on PD	AR	
-55	532516	. . STUD, Plain 3/8-16 x 3/8-24 x 4 in.	6	
	532516P003	. . STUD, 3/8-16 x 3/8-24 x 4 in. 0.003 in. OS on PD . . .	AR	
	532516P006	. . STUD, 3/8-16 x 3/8-24 x 4 in. 0.006 in. OS on PD . . .	AR	
	532516P009	. . STUD, 3/8-16 x 3/8-24 x 4 in. 0.009 in. OS on PD . . .	AR	
-56	532340	44. CASE, Accessory rear half	NP	
11-	No Number	PUMP AND HOSE ASSEMBLY, Oil	NP	
-1	MS28741-10-25	. . HOSE ASSEMBLY, Hydraulic and pneumatic 25 in. long . . (ATTACHING PARTS)	1	
-2	AN365-1032	. . NUT	1	
-3	AN3-3A	. . BOLT	1	
-4	AN742-10C	. . CLAMP	1	
-5	AN742-17C	. . CLAMP	1	
-6	AN622-10B	. . ELBOW	1	
-7	AN840-16	. . ADAPTER	1	
-8	532381	. . GEAR, Oil pump driven	1	
-9	532435	. . GEAR, Oil pump driver	1	
	532502-A1	. . BODY ASSEMBLY, Complete oil pump (ATTACHING PARTS)	1	
-10	356-524	. . LOCK, Nut 5/16-24	6	

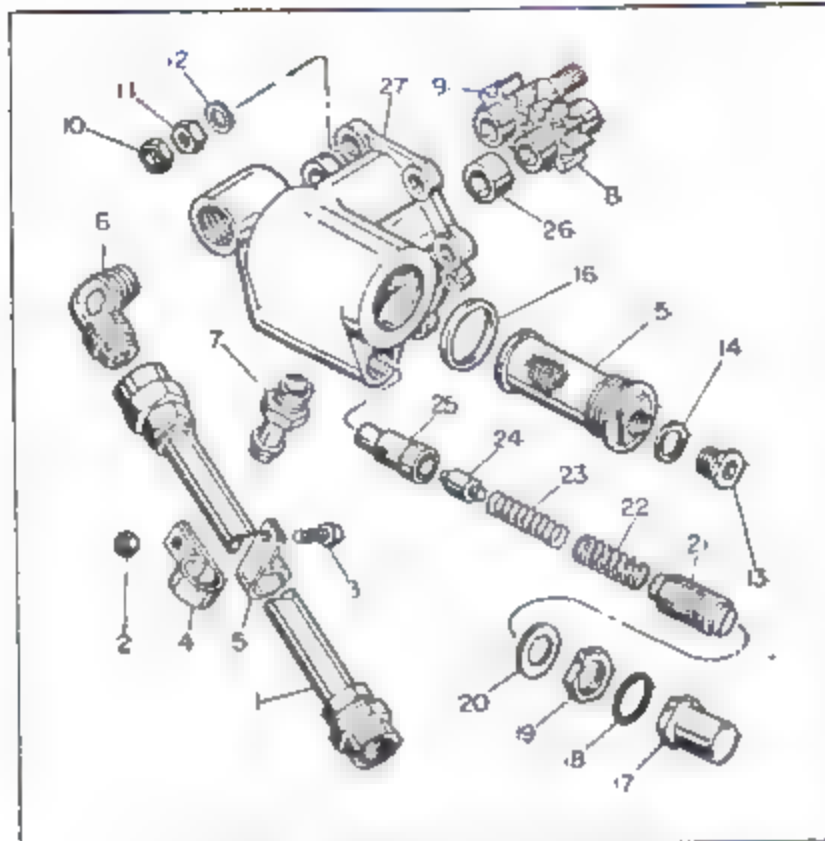


Figure 11. Oil Pump and Hose Assembly

FIG. & INDEX NO.	PART NO.	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE
		1	2	3	4	5	6	7		
11-11	AN121503	.	.	.	.	.	.	.	8	
-12	AN960-516	.	.	.	.	.	.	.	8	
-13	532432	.	.	.	.	.	.	.	1	
-14	AN900-10	.	.	.	.	.	.	.	1	
-15	A35996	.	.	.	.	.	.	.	1	
-16	AN900-29	.	.	.	.	.	.	.	1	
-17	20970	.	.	.	.	.	.	.	1	
-18	AN900-16	.	.	.	.	.	.	.	1	
-19	20958	.	.	.	.	.	.	.	1	
-20	AN900-16	.	.	.	.	.	.	.	1	
-21	533160	.	.	.	.	.	.	.	1	
-22	533105	.	.	.	.	.	.	.	1	
-23	533106	.	.	.	.	.	.	.	1	
-24	625173	.	.	.	.	.	.	.	1	
-25	533104	.	.	.	.	.	.	.	1	
	532502	.	.	.	.	.	.	.	1	
-26	532437	.	.	.	.	.	.	.	2	
-27	532433	.	.	.	.	.	.	.	1	

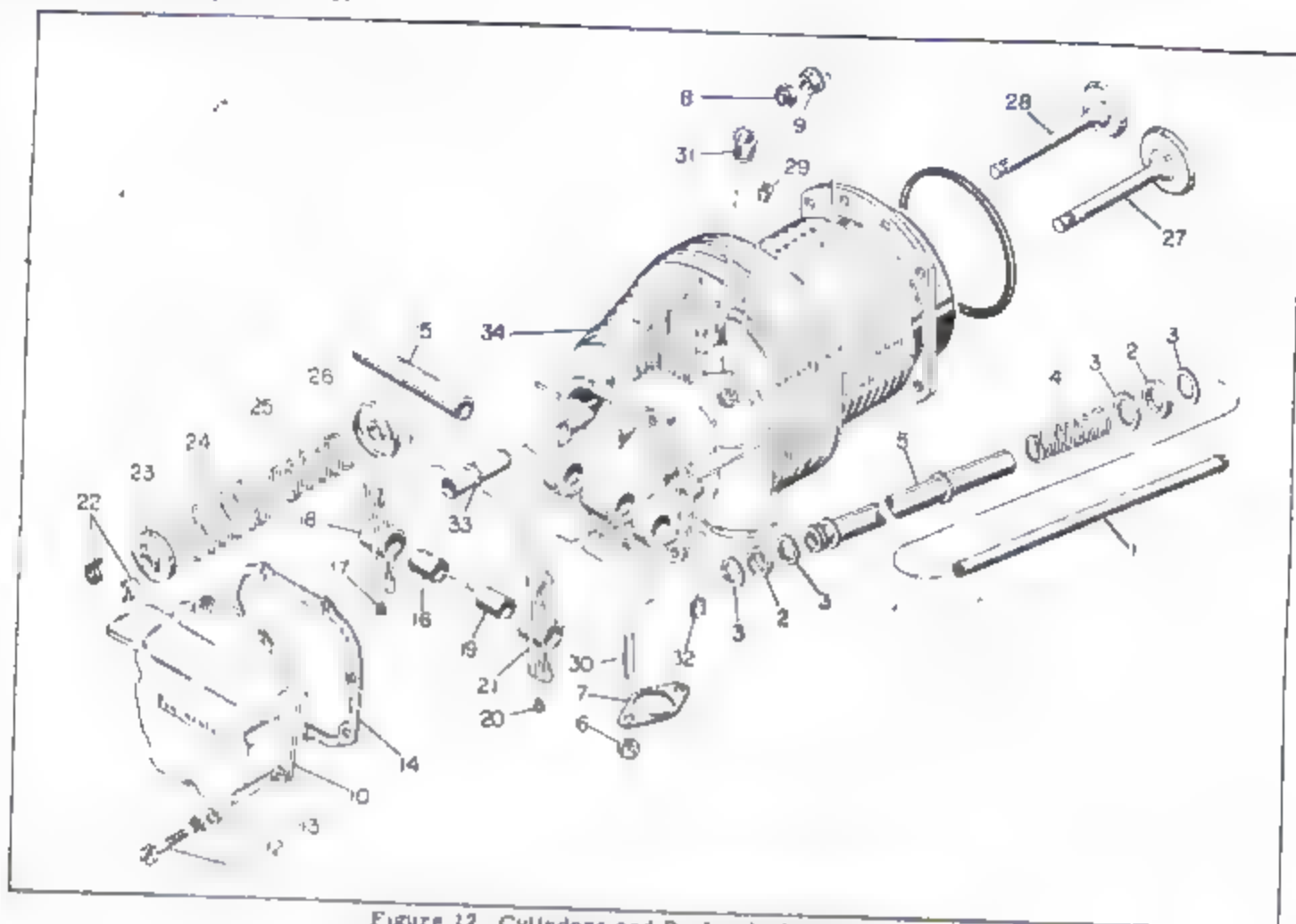


Figure 12. Cylinders and Pushrods Assembly

FIG & INDEX NO.	PART NO.	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE
		1	2	3	4	5	6	7		
12-	No Number	CYLINDERS AND PUSHRODS ASSEMBLY							NP	
-1	537490	PUSHROD ASSEMBLY							12	
-2	536410	PACKING, Pushrod housing							24	
-3	534009	WASHER, Pushrod housing							36	
-4	535052	SPRING, Pushrod housing							12	
-5	534603	HOUSING, Pushrod removable							12	
-6	532393	NUT, Special 5/16-24							12	
-7	21493	GASKET, Exhaust flange							6	
	538587-A4	CYLINDER ASSEMBLY, Complete							6	
-8	356-720	(ATTACHING PARTS)								
-9	531001	LOCK							36	
		NUT, Flanged hex 7/16-20							36	
-10	532450	COVER, Valve rocker							1	
-11	AN500-416-12	(ATTACHING PARTS)								
-12	AN936A416	SCREW							7	
-13	AN960-416L	WASHER							7	
		WASHER							7	
-14	532451	GASKET							1	
-15	24797	SHAFT, Valve rocker							1	
	24797P005	SHAFT, Valve rocker 0.005 in. OS on OD							AR	
-16	025145	BEARING, Valve rocker							1	
-17	025081	ROCKER ASSEMBLY, Intake valve							1	
-18	AN535-2-2	SCREW							2	
	025448	ROCKER, Intake valve							1	

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
12-19	625145	BEARING, Valve rocker	1	
	625082	ROCKER ASSEMBLY, Exhaust valve	1	
-20	AN535-2-2	SCREW	1	
-21	625512	ROCKER, Exhaust valve	1	
	538567-A3	CYLINDER AND VALVE ASSEMBLY	1	
-22	24802	KEY, Valve spring outer retainer	4	
-23	F.R RA-43-A	ROTOCAP ASSEMBLY (TP) (532067)	2	
-24	520105	SPRING, Valve outer	2	
-25	520106	SPRING, Valve inner	2	
-26	24789	RETAINER, Valve spring inner	2	
-27	537844	VALVE, Exhaust	1	
-28	532129	VALVE, Intake	1	
	538567	MACHINING ASSEMBLY, Cylinder	1	
-29	AN532-2	PLUG	1	
-30	AN126288	BOLT STUD	2	
-31	C2-52	INSERT, Spark plug (AF) (520112)	2	
-32	MS 22121	INSERT	2	
-33	515152	GUIDE, Valve	2	
	515152P005	GUIDE, Valve 0.005 in. OS on OD	AR	
	515152P010	GUIDE, Valve 0.010 in. OS on OD	AR	
	515152P015	GUIDE, Valve 0.015 in. OS on OD	AR	
	515152P020	GUIDE, Valve 0.020 in. OS on OD	AR	
-34	No Number	HEAD AND BARREL ASSEMBLY	NP	
13-	539786-A1	PISTON ASSEMBLY, Complete	6	
-1	539467	PIN AND PLUG ASSEMBLY, Piston	1	
	539786-A2	PISTON AND RING ASSEMBLY	1	
-2	625147	RING, Compression piston 5 OD x 0.089 in. wide	2	
	625147P005	RING, Compression piston 5 OD x 0.089 in. wide 0.005 in. OS on OD	AR	
	625147P015	RING, Compression piston 5 OD x 0.089 in. wide 0.015 in. OS on OD	AR	
-3	536939	RING, Oil control piston 5 OD x 0.155 in. wide	1	
	536939P005	RING, Oil control piston 5 OD x 0.155 in. wide 0.005 in. OS on OD	AR	
	536939P015	RING, Oil control piston 5 OD x 0.155 in. wide 0.015 in. OS on OD	AR	
-4	539786	PISTON, 7:1 compression ratio forged 5 in. dia	1	
	539786P015	PISTON, 7:1 compression ratio forged 5 in. dia 0.015 in. OS on OD	AR	

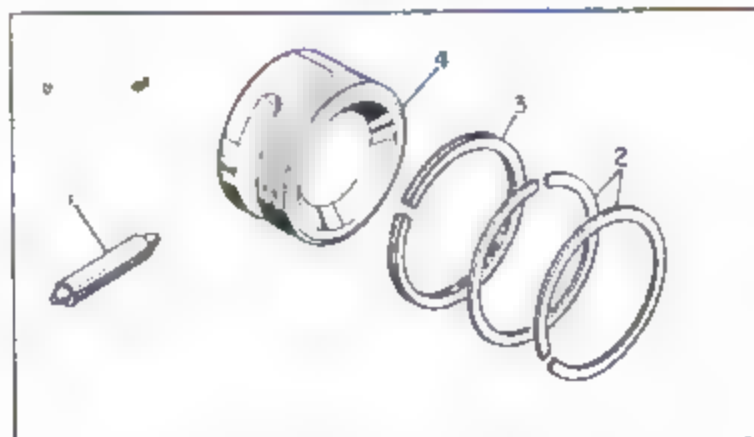


Figure 13. Complete Piston Assembly

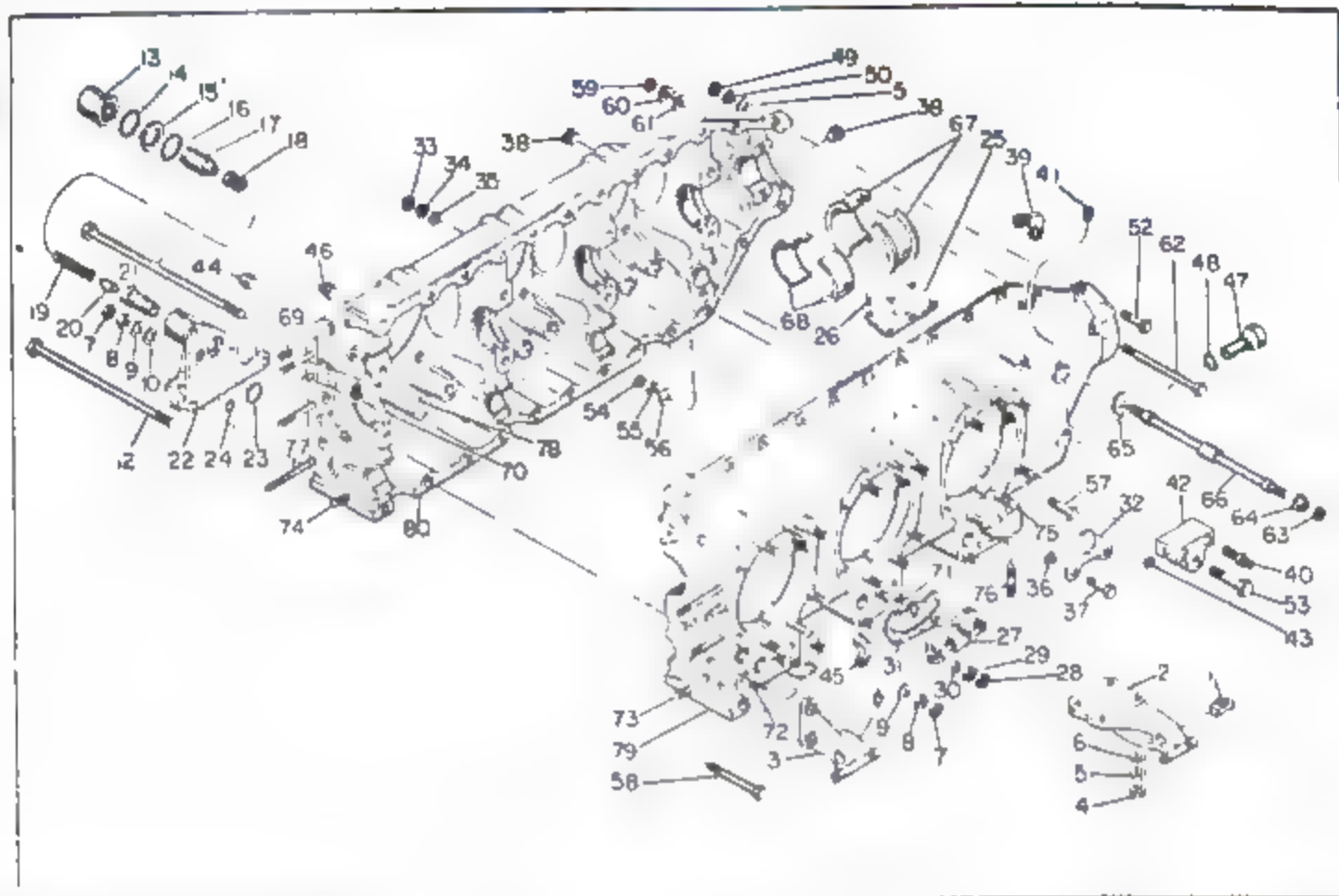


Figure 14. Crankcase Group

FIG. & INDEX NO.	PART NO.	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE
		1	2	3	4	5	6	7		
14-	No Number	CRANKCASE GROUP							NP	
	No Number	BRACKET AND NUT ASSEMBLY, Engine mount							NP	
-1	539911	NUT, Barrel 7/16-20 x 1.06 in. long							4	
-2	625077	BRACKET, Engine mount front right hand							1	
	625076	BRACKET, Engine mount front left hand							1	
-3	625078	BRACKET, Engine mount rear right hand							1	
	625117	BRACKET AND OIL PRESSURE RELIEF ASSY (ATTACHING PARTS)							NP	
-4	356-624	LOCK							9	
-5	AN121504	NUT							9	
-6	AN960 616L	WASHER							10	
-7	356-524	LOCK							3	
-8	AN121503	NUT							3	
-9	AN960-616L	WASHER							6	
-10	625449	SPACER, Crankcase thru bolt 0.45 ID x 0.88 OD x 0.078 in. thick							1	
-11	36007	BOLT, Hex head 5/16-24 x 10-9/16 in. long							1	
-12	538524	BOLT, Hex head 3/8-24 x 10-5/8 in. long							1	
-13	20970	CAP, High pressure relief valve							1	
-14	AN900-16	GASKET							1	
-15	20968	NUT, High pressure adjusting screw lock							1	
-16	AN900-16	GASKET							1	
-17	533166	SCREW AND BUSHING ASSEMBLY, Oil pressure							1	
-18	533105	SPRING, Oil pump outer							1	
-19	533108	SPRING, Oil pump inner							1	

FIG. & INDEX NO.	PART NO.	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE
		1	2	3	4	5	6	7		
14-20	625173	.	.	.	PISTON, Oil pressure relief	.	.	.	1	
-21	533104	.	.	.	SLEEVE, Oil pressure relief	.	.	.	1	
-22	625078	.	.	.	BRACKET, Engine mount rear left hand	.	.	.	1	
-23	AN123872	.	.	.	SEAL	.	.	.	1	
-24	AN123886	.	.	.	SEAL	.	.	.	1	
-25	625118	.	.	.	PLATE, Identification	.	.	.	1	
		.	.	.	(ATTACHING PART)	.	.	.		
-26	AN535-0-3	.	.	.	SCREW	.	.	.	6	
			
	536522	.	.	.	CRANKCASE ASSEMBLY, Complete	.	.	.	1	
-27	531186	.	.	.	FLANGE, Pushrod housing	.	.	.	6	
		.	.	.	(ATTACHING PARTS)	.	.	.		
-28	358-428	.	.	.	LOCK	.	.	.	18	
-29	AN121502	.	.	.	NUT	.	.	.	18	
-30	AN960-416L	.	.	.	WASHER	.	.	.	18	
			
-31	352058	.	.	.	GASKET, Pushrod housing flange	.	.	.	6	
-32	531470	.	.	.	EYE, Engine lifting	.	.	.	1	
		.	.	.	(ATTACHING PARTS)	.	.	.		
-33	358-428	.	.	.	LOCK	.	.	.	2	
-34	AN121502	.	.	.	NUT	.	.	.	2	
-35	AN960-416L	.	.	.	WASHER	.	.	.	4	
-36	25144	.	.	.	WASHER, Special 9/32 ID x 1/8 OD x 1/8 in. thick	.	.	.	2	
-37	AN4-13A	.	.	.	BOLT	.	.	.	2	
			
-38	AN932C4	.	.	.	PLUG	.	.	.	2	
-39	AN842-10	.	.	.	ELBOW	.	.	.	1	
-40	AN780-2	.	.	.	NIPPLE	.	.	.	8	
-41	AN912-2	.	.	.	PLUG	.	.	.	1	
-42	532676	.	.	.	DISTRIBUTOR, Primer	.	.	.	1	
-43	AN932-2	.	.	.	PLUG	.	.	.	2	
-44	520124	.	.	.	PLUG, Square head pipe	.	.	.	1	
-45	AN423-10B	.	.	.	ELBOW	.	.	.	1	
-46	AN913-1S	.	.	.	PLUG	.	.	.	2	
-47	531433	.	.	.	ADAPTER, Oil gallery	.	.	.	1	
-48	AN900-10	.	.	.	GASKET	.	.	.	1	
	625113	.	.	.	MACHINING ASSEMBLY, Crankcase	.	.	.	NP	
-49	358-428	.	.	.	LOCK	.	.	.	10	
-50	AN121502	.	.	.	NUT	.	.	.	10	
-51	AN960-416L	.	.	.	WASHER	.	.	.	20	
-52	AN4-11A	.	.	.	BOLT	.	.	.	11	
-53	AN4-14A	.	.	.	BOLT	.	.	.	1	
-54	358-524	.	.	.	LOCK	.	.	.	8	
-55	AN121503	.	.	.	NUT	.	.	.	8	
-56	AN960-516L	.	.	.	WASHER	.	.	.	16	
-57	AN5 14A	.	.	.	BOLT	.	.	.	7	
-58	AN5-32A	.	.	.	BOLT	.	.	.	1	
-59	358-624	.	.	.	LOCK	.	.	.	2	
-60	531003	.	.	.	NUT, Hex flanged 3/8-24	.	.	.	2	
-61	24239	.	.	.	WASHER, Plain 3/8 ID x 1/8 in. thick	.	.	.	4	
-62	AN8-47A	.	.	.	BOLT	.	.	.	2	
-63	358-720	.	.	.	LOCK	.	.	.	16	
-64	531001	.	.	.	NUT, Hex flanged 7/16-20	.	.	.	16	
-65	25171	.	.	.	SPACER, Crankcase through bolt 29/84 ID x 7/8 OD x 5/32 in. thick	.	.	.	3	
-66	631205	.	.	.	BOLT, Crankcase through 7/16-20 x 10-11/16 in. long	.	.	.	8	
-67	40844	.	.	.	BEARING, Crankshaft main thrust	.	.	.	2	
	40844M010	.	.	.	BEARING, Crankshaft main thrust 0.010 in. under- size on ID	.	.	.	AR	
-68	530386	.	.	.	BEARING, Crankshaft main	.	.	.	8	
	530386M010	.	.	.	BEARING, Crankshaft main 0.010 in. undersize on ID	.	.	.	AR	
	625114	.	.	.	STUDDING ASSEMBLY, Crankcase	.	.	.	1	

FIG. & INDEX NO.	PART NO.	DESCRIPTION						UNITS PER ASSY	USABLE ON CODE
		1	2	3	4	5	6		
14-69	MS122162	.	.	.	.	INSERT, Heli-Coil 5/16-18 x 5/8 in. long . . .		5	
-70	21080	.	.	.	.	DOWEL, 1/4 dia x 9/16 in. long		2	
-71	AN125964	.	.	.	.	STUD		18	
-72	AN126300	.	.	.	.	STUD		3	
-73	21167	.	.	.	.	STUD, 1/4-20 x 1/4-28 x 1 in. long		2	
	21167P003	.	.	.	.	STUD, 1/4-20 x 1/4-28 x 1 in. long 0.003 in. OS on PD		AR	
	21167P006	.	.	.	.	STUD, 1/4-20 x 1/4-28 x 1 in. long 0.006 in. OS on PD		AR	
	21167P009	.	.	.	.	STUD, 1/4-20 x 1/4-28 x 1 in. long 0.009 in. OS on PD		AR	
-74	25030	.	.	.	.	STUD, Plain 5/16-18 x 5/16-24 x 1-1/16 in. lg		6	
	25030P003	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 1-1/16 in. 0.003 in. OS on PD		AR	
	25030P006	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 1-1/16 in. 0.006 in. OS on PD		AR	
	25030P009	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 1-1/16 in. 0.009 in. OS on PD		AR	
-75	531145	.	.	.	.	STUD, 7/16-14 x 7/16-20 x 1.86 in. long		6	
	531145P003	.	.	.	.	STUD, 7/16-14 x 7/16-20 x 1.86 in. 0.003 in. OS on PD		AR	
	531145P006	.	.	.	.	STUD, 7/16-14 x 7/16-20 x 1.86 in. 0.006 in. OS on PD		AR	
	531145P009	.	.	.	.	STUD, 7/16-14 x 7/16-20 x 1.86 in. 0.009 in. OS on PD		AR	
-76	532515	.	.	.	.	STUD, 3/8-16 x 3/8-24 x 1-3/4 in. long		6	
	532515P003	.	.	.	.	STUD, 3/8-16 x 3/8-24 x 1-3/4 in. 0.003 in. OS on PD		AR	
	532515P006	.	.	.	.	STUD, 3/8-16 x 3/8-24 x 1-3/4 in. 0.006 in. OS on PD		AR	
	532515P009	.	.	.	.	STUD, 3/8-16 x 3/8-24 x 1-3/4 in. 0.009 in. OS on PD		AR	
-77	532517	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 4-1/4 in. long . . .		2	
	532517P003	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 4-1/4 in. 0.003 in. OS on PD		AR	
	532517P006	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 4-1/4 in. 0.006 in. OS on PD		AR	
	532517P009	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 4-1/4 in. 0.009 in. OS on PD		AR	
-78	532522	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 3-5/16 in. long . . .		3	
	532522P003	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 3-5/16 in. 0.003 in. OS on PD		AR	
	532522P006	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 3-5/16 in. 0.006 in. OS on PD		AR	
	532522P009	.	.	.	.	STUD, 5/16-18 x 5/16-24 x 3-5/16 in. 0.009 in. OS on PD		AR	
-79	532367	.	.	.	.	CRANKCASE, Cylinders No. 1,3,5		NP	
-80	625076	.	.	.	.	CRANKCASE, Cylinders No. 2,4,6		NP	

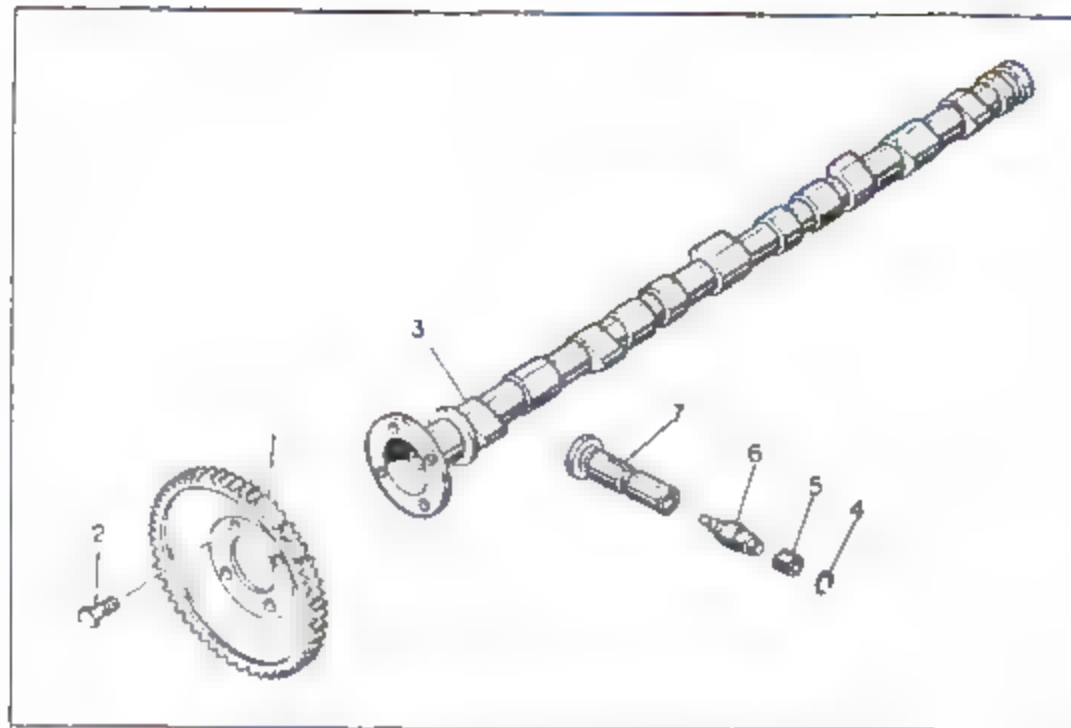


Figure 15. Camshaft and Lifters Assembly

FIG. & INDEX NO.	PART NO	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
15-	No Number	CAMSHAFT AND LIFTERS ASSEMBLY	NP	
-1	530877-A3	. CAMSHAFT ASSEMBLY	1	
	530695	. . GEAR, Camshaft drive	1	
-2	537010	(ATTACHING PART) . . SCREW, Drilled hex head 5/16-24 x 0.53 in. long . .	4	
-3	536877	---*--- . . CAMSHAFT	1	
	H-23179	. LIFTER ASSEMBLY, Hydraulic (WCX) (533400)	12	
-4	H-7397	. . RING, Snap (WCX) (530940)	1	
-5	H-7392	. . SOCKET, Pushrod (WCX) (25042)	1	
-6	H-3814	. . UNIT, Hydraulic valve tappet (WCX) (533399)	1	
-7	H-5576	. . BODY, Hydraulic lifter (WCX) (531128)	1	

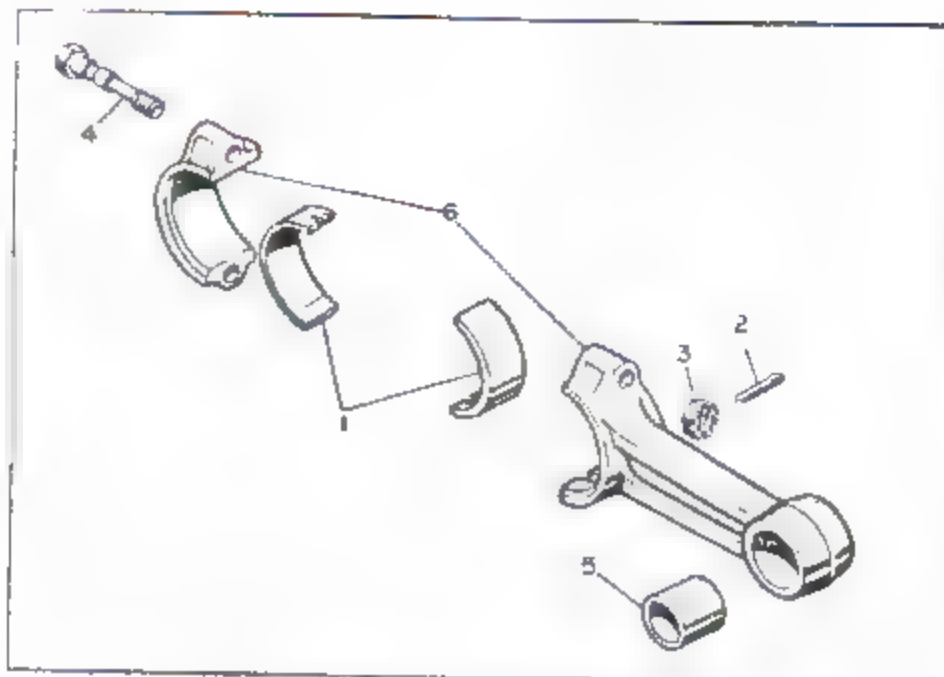


Figure 10. Complete Connecting Rod Assembly

FIG. & INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
		1 2 3 4 5 6 7		
16-	A36121-A2	ROD ASSMBLY, Complete connecting	6	
-1	530383	BEARING, Connecting rod upper and lower	2	
	53 383M010	BEARING, Connecting rod upper and lower 0.010 in. undersize on ID	AR	
	A36121	ROD ASSEMBLY, Connecting	1	
-2	AN380-2-2	PIN	2	
-3	24804	NUT, Special hex 3/8-24 x 0.33 in. high	2	
-4	35972	BOLT, Connecting rod 3/8-24 x 2-1/2 in. long	2	
-5	530458	BUSHING, Connecting rod split	1	
-6	40744	ROD AND CAP, Connecting	NP	
17-	No Number	CRANKSHAFT ASSEMBLY, Complete	NP	
-1	532138	JAW, Starter (ATTACHING PARTS)	1	
-2	AN380 3-4	PIN	1	
-3	AN320-9	NUT	1	
-4	AN980-916L	WASHER	1	
-5	536376	GEAR, Pinion (ATTACHING PART)	1	
-6	536378	SCREW, Drilled hex head 5/16-18 x 5/16-24 x 1-3/4 in. long	8	
-7	536563	DOWEL, 0.282 dia x 11/16 in.	1	
	530570	SEAL ASSY, Crankshaft oil for 2-3/8 in. dia shaft	1	
-8	533261	SPRING, Oil seal	1	
-9	536579	SEAL ASSEMBLY, Rubber and felt	NP	
-10	AN133892	PACKING	1	
-11	AN380-2 3	PIN	2	
	535849	COLLAR ASSEMBLY, Oil transfer	1	
-12	2456	NUT, Castle hex 1/4-28	2	
-13	AN960 416L	WASHER	2	
-14	535885	SCREW, Hex head cap 1/4-28 x 1-1/2 in. long	2	
-15	535851	TUBE, Oil transfer	NP	

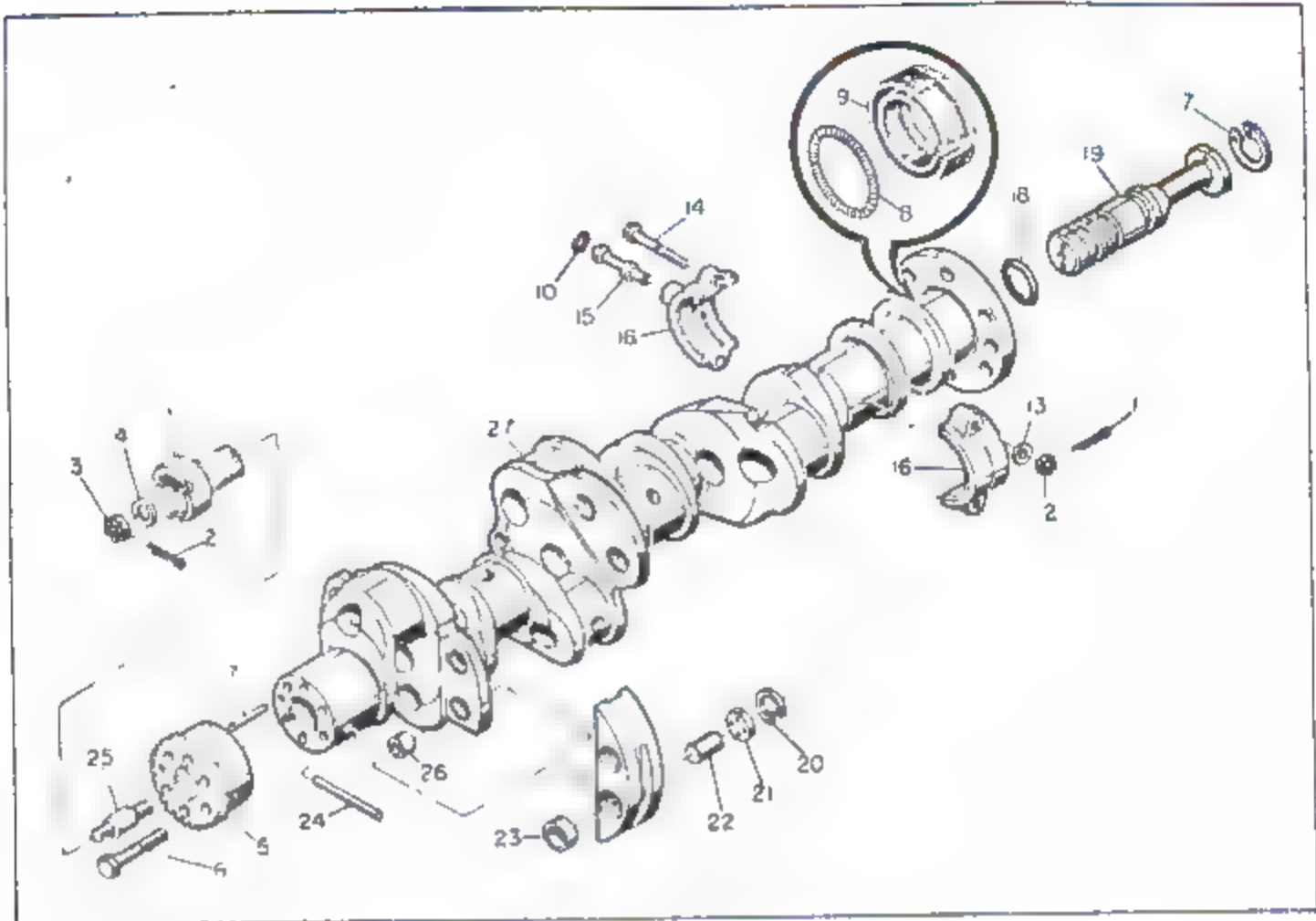


Figure 17. Complete Crankshaft Assembly

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
17-16	536051	• • COLLAR, Governor oil transfer	NP	
-17	5000-165	• RING, Internal retaining (WKI) (535688)	1	
-18	AN123876	• PACKING	3	
-19	537310	• PLUG ASSEMBLY, Crankshaft oil transfer	1	
	625056	• CRANKSHAFT AND DAMPER ASSEMBLY	1	
-20	5000-87	• • RING, Internal retaining (WKI) (352116)	16	
-21	352115	• • PLATE, Crankshaft damper counterweight pin retaining	16	
-22	350999	• • PIN, Crankshaft damper counterweight	8	
	352117	• • COUNTERWEIGHT ASSY, Crankshaft damper 8th order	NP	
-23	350997	• • BUSHING, Crankshaft damper counterweight	16	
-24	23513	• • DOWEL, 3/16 dia x 1-31/32 in. long	1	
-25	532303	• • STUD, Starter jaw retaining, 9/16-18 x 3/4 x 3-5/32 in. long	1	
	535568	• • CRANKSHAFT ASSEMBLY	NP	
-26	350998	• • BUSHING, Crankshaft damper	8	
-27	No Number	• • CRANKSHAFT, Tubes and plug assembly	NP	

SECTION III
NUMERICAL INDEX

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ART-ICLE
AN12008		8-18	1
AN121502		2-3	52
AN121503		3-36	68
AN121514		2-8	21
AN123862		1-10	1
AN123866		14-24	1
AN123872		14-23	1
AN123878		7-18	3
AN123879		8-21	1
AN125964		10-49	20
AN126288		12-30	12
AN12630		7-18	7
AN126420		10-21	1
AN3-3A		11-3	1
AN302-20-3		3-10	6
AN3104-1		3-13	8
AN320-4		9-44	2
AN320-9		17-3	1
AN365-1032		11-2	1
AN360-2-2		16-2	12
AN360-2-3		17-11	2
AN380-3-4		17-2	1
AN381-2-7		9-43	2
AN4-11A		14-52	11
AN4-13A		14-37	2
AN4-14A		14-53	1
AN4022-1		4-10	4
AN4023-1		4-11	2
AN4044-1		9-23	1
AN4045-1		2-5	3
AN4047-1		2-10	2
AN4059-1		6-5	1
AN4116-R1		2-8	1
AN4184-2		3-11	6
AN430A4 4		9-1	1
AN435-5C4		9-9	2
AN5-14A		14-57	7
AN5-32A		14-58	1
AN500-416-12		12-11	42
AN501-10 10		3-3	8
AN530-10-6		4-1	4
AN535-0 3		14-26	6
AN5352-2		12-17	18
AN5357-2		3-1	1
AN6-47A		14-62	2
AN742-10C		11-4	1
AN742-17C		11-5	1
AN742D 9C		3-5	2
AN745-2A		8-18	2
AN745-3A		8-15	2
AN75-4		8-2	3
AN75A17		9-48	1
AN75A21		7-4	2

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ART-ICLE
AN75A7		9-49	4
AN780-2		14-40	6
AN822 10B		11-6	1
AN823-10B		14-45	1
AN840-16		11-7	1
AN842-10		14-39	1
AN900-10		11-14	2
AN900-13		9-35	1
AN900-16		8-13	6
AN900-29		11-16	1
AN913-1		7-17	1
AN913-1D		8-14	1
AN913-1S		14-46	2
AN913-2S		10-34	1
AN913-3S		10-33	1
AN932-2		10-10	14
AN932C4		10-36	3
AN935-10		3-4	8
AN936A418		7-3	54
AN960-416L		2-4	122
AN960-516		6-4	38
AN960-516L		5-4	44
AN960-516		2-9	12
AN960-816L		14-8	10
AN960-916L		17-4	1
A25984		3-2	2
A35996		11-15	1
A36114		8-11	1
A36121		16-	6
A36121-A2		16-	6
BG-708-9		3-	Opt
C1779-10Z-1		4-2	4
		4-6	
C2-32		12-31	12
C27S		3-28	12
F.R.RA-43-A		12-23	12
GM-2,44		7-10	14
		7-12	
H-23179		15-	12
H-3814		15-6	12
H-5576		15-7	12
H-7392		15-8	12
H 7397		15-4	12
MS122121		12-32	12
MS122182		14-69	5
MS28741-10-25		11-1	1
RC265		3-	Opt
RG9080		6-1	1
WE1008		3-12	6
WE1009		3-14	6
WE1122		3-9	6
WE1214-1		3-	1
WE1214-2		3-	1

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ART-ICLE
WE301-1-2700		3-17	1
WE301-1-3000		3-16	2
		3-24	
WE301-2-2200		3-22	1
WE301-2-3200		3-23	1
WE301-2-3400		3-19	1
WE301-2-3600		3-18	2
		3-26	
WE301-2-3800		3-25	1
WE301-2-4000		3-21	1
WE301-2-4200		3-27	1
WE301-2-4300		3-20	1
10-37668		3-30	2
10-37669		3-33	1
10-50771		3-7	2
10-50777		3-8	2
10-51365-17		3-34	2
10-51077		3-6	12
10-52306		3-	2
10-7029		3-31	2
10-7030		3-32	2
1345-3		2-11	1
2-155		3-28	2
20273		9-34	1
20275		8-19	1
20968		11-19	2
		14-15	
20970		11-17	2
		14-13	
21080		14-70	2
21167		14-73	2
21167P003		14-	AR
21167P008		14-	AR
21167P009		14-	AR
21493		12-7	8
22319		10-17	8
22319P003		10-	AR
22319P008		10-	AR
22319P009		10-	AR
22325		10-18	14
22325P003		10-	AR
22325P006		10-	AR
22325P009		10-	AR
23389		8-	NP
23513		17-24	1
23888		8-	1
24239		14-61	4
2456		17-21*	2
24797		12-15	8
24797P005		12-	AR
24799		12-26	12
24802		12-23	24
24804		16-3	12
24826		7-14	6
24827		7-11	7
24830		7-1	12
25005		9-29	1
25008		10-49	4
25008P003		10-	AR
25008P006		10-	AR
25008P009		10-	AR

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ART-ICLE
25030		14-74	6
25030P003		14-	AR
25030P006		14-	AR
25030P009		14-	AR
25042		See H-7392	
25164		14-38	2
25171		14-65	3
25312		See 10-50777	
25314		See 2-155	
25316		See 10-7029	
25317		See 10-7030	
25318		See 10-37689	
2832		8-12	1
3P-194-F		2-16	1
350997		17-23	18
350998		17-26	8
350999		17-22	8
352024		See 10-52306	
352058		14-31	0
352059		7-8	1
352060		7-9	1
352093		8-4	1
352111		9-	1
352115		17-21	16
352117		17-	NP
356-428		2-2	52
356-524		3-36	85
356-624		2-12	23
356-720		12-8	52
35972		16-4	12
35985		5-5	1
36007		14-11	1
36114		8-	NP
36151-E		See GM-2.44	
36181		9-14	1
36219		See 10-50771	
391829		9-1	1
401508		3-37	4
40640-C		7-16	6
40844		14-87	2
40644M010		14-	AR
40744		16-6	NP
49141		9-64	1
49182		3-1	1
5000-165		17-17	1
5000-87		17-20	16
50021-S		9-62	2
50030-S		9-68	1
50045-S		9-65	1
50184-S		9-67	1
501868		9-47	1
50217-8		9-88	1
5100-112		9-69	1
515152		12-33	12
515152P005		12-	AR
515152P010		12-	AR
515152P015		12-	AR
515152P020		12-	AR
520105		12-24	12
520106		12-25	12
520112		See C2-52	

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ARTICLE
520124		14-44	1
530455		See 10-37688	
530383		16-1	13
530383M010		16-	AR
530388		14-68	8
530388M010		14-	AR
530470		14-32	1
530658		16-5	8
530840		See H-7397	
531001		12-9	52
531003		14-60	2
531128		See H-5576	
531132-1		See C278	
531145		14-75	8
531145P003		14-	AR
531145P006		14-	AR
531145P009		14-	AR
531177		9-73	2
531178		3-40	2
531179		3-39	4
531188		14-27	6
531205		14-66	8
531433		14-47	1
531678		See 10-51365-17	
532067		See F.R.RA-43-A	
532129		12-28	6
532138		17-1	1
532139		9-24	1
532140		10-8	NP
532172		9-72	NP
532174		9-56	1
532177		9-53	NP
532178		9-57	1
532179		9-61	1
532180		9-59	NP
532181		9-55	NP
532182		See 1345-3	
532197		See AN4116-R1	
532199		9-52	1
532202		9-71	1
532257		10-38	1
532299		10-	NP
532300		10-30	NP
532303		17-25	1
532316		10-39	1
532317		10-40	1
532318		10-11	3
		10-41	2
532331		10-12	2
532349		10-56	NP
532350		10-24	NP
532362		See C1779-102-1	
532367		14-79	NP
532381		11-8	1
532393		12-6	12
532402		See RG9080	
532432		11-13	1
532433		11-27	1
532435		11-9	1
532437		10-41	4
		11-26	1
532450		12-10	6

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ARTICLE
532451		12-14	6
532458		8-17	1
532461		8-20	1
532461-A1		8-	NP
532467		See 39141	
532473		10-25	1
532477		9-75	NP
532478		9-74	NP
532479		0-	2
532480		10-43	1
532481		10-13	3
		10-44	
532482		9-51	1
532484		10-7	1
532485		10-15	2
532486		See 5100-112	
532487		9-70	1
532489		See 50045-8	
532490		8-16	1
532501		10-51	8
532501P003		10-	AR
532501P006		10-	AR
532501P009		10-	AR
532502		11-	1
532502-A1		11-	1
532505		10-19	2
532505P003		10-	AR
532505P006		10-	AR
532505P009		10-	AR
532506		See 50217-5	
532507		10-20	15
532507P003		10-	AR
532507P006		10-	AR
532507P009		10-	AR
532508		See 50184-8	
532509		9-13	1
532510		See 50021-8	
532511		10-53	4
532511P003		10-	AR
532511P006		10-	AR
532511P009		10-	AR
532513		10-54	4
532513P003		10-	AR
532513P006		10-	AR
532513P009		10-	AR
532514		10-22	5
532514P003		10-	AR
532514P006		10-	AR
532514P009		10-	AR
532515		10-6	9
532515P003		10-	AR
532515P006		10-	AR
532515P009		10-	AR
532516		10-54	6
532516P003		10-	AR
532516P006		10-	AR
532516P009		10-	AR
532517		14-77	2
532517P003		14-	AR
532517P006		14-	AR
532517P009		14-	AR
532518		10-31	2

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ART-ICLE
532519		10-9	1
532520		9-28	1
532522		14-78	3
532522P003		14-	AR
532522P006		14-	AR
532522P009		14-	AR
532524		10-46	2
532525		10-16	2
532528		10-	NP
532532		9-19	1
532534		See 50030-8	
532536		0-	1
532537		10-	1
532538		10-	1
532539		10-	1
532540		9-	1
532541		9-	1
532542		9-	1
532543		9-	1
532553		10-	NP
532612		10-23	1
532612P003		10-	AR
532612P006		10-	AR
532612P009		10-	AR
532613		9-10	2
532632		9-12	NP
532656		4-	1
532676		14-43	1
532683		10-45	2
532684		10-28	2
532685		4-	2
532686		4-8	2
532687		4-	2
532820		10-	REF
532820-A1		9-39	1
532943		4-	1
532944		4-8	1
532945		4-3	3
532946		4-	1
532947		4-4	1
533031		10-14	2
533053		9-3	1
533054		9-2	1
533058		9-	1
533067		See 49162	
533104		11-25	2
		14-21	
533105		11-22	2
		14-18	
533106		11-23	2
		14-19	
533166		11-21	2
		14-17	
533261		17-8	1
533355		9-4	1
533399		See H-3814	
533400		See H-23179	
533406		9-60	1
534204		7-19	NP
534204-A1		7-	1
534204-A2		7-	1

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ART-ICLE
534603		12-5	12
534609		12-3	36
535052		12-4	12
535063		9-11	1
535324		3-38	2
535527		9-45	1
535649		17-	1
535651		17-15	NP
535685		17-14	2
536043		3-	1
536051		7-16	NP
536375		17-5	1
536378		17-6	6
536410		12-2	24
536524		14-12	1
536563		17-7	1
536570		17-	1
536579		17-9	NP
536740		See 8495	
536877		15-3	1
536877-A3		15-	1
536939		13-3	6
536939P005		13-	AR
536939P015		13-	AR
537019		15-2	4
537310		17-19	1
537316		See A25984	
537490		12-1	12
537540		See 3P-164-F	
537744		10-36	1
537844		12-27	6
538567		12-	6
538567-A3		12-	6
538567-A4		12-	6
538695		15-1	1
538696		9-59	1
538999		7-6	2
539487		13-1	6
539634		9-66	1
539796		13-4	6
539796P015		13-	AR
539796-A1		13-	6
539796-A2		13-	6
539911		14-1	4
625056		17-	1
625058		17-	NP
625075		14-80	NP
625076		14-	1
625077		14-2	1
625078		14-22	1
625079		14-3	1
625081		12-	6
625082		12-	6
625098		See 391529	
625109		8-	1
625112		14-	1
625113		14-	NP
625114		14-	1
625116		14-25	1
625117		14-	1
625140		8-1	1

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ARTICLE
625145		12-16	12
		12-19	
625147		13-2	12
625147P005		13-	AR
625147P015		13-	AR

PART NO.	SOURCE CODE	FIG. AND INDEX NO.	QTY PER ARTICLE
625173		11-24	2
		11-20	
625446		12-18	6
625449		14-10	1
625512		12-21	6
8495		7-15	6